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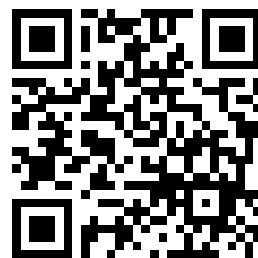
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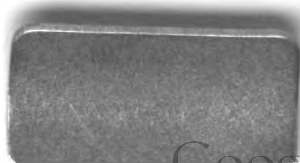
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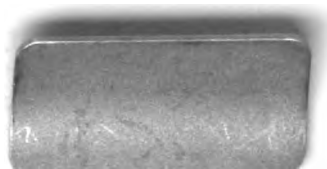
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THE JOURNAL OF MENTAL SCIENCE

*(Published by Authority of the Medico-Psychological Association
of Great Britain and Ireland).*

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"Nos vero intellectum longius a rebus non abstrahimus quam ut rerum imagines et
radii (ut in sensu fit) cœtere possint."

FRANCIS BACON, *Proleg. Instaurat. Meg.*

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"In adopting our title of the *Journal of Mental Science*, published by authority of the *Medico-Psychological Association*, we profess that we cultivate in our pages mental science of a particular kind, namely, such mental science as appertains to medical men who are engaged in the treatment of the insane. But it has been objected that the term mental science is inapplicable, and that the terms, mental physiology, or mental pathology, or psychology, or psychiatry (a term much affected by our German brethren), would have been more correct and appropriate; and that, moreover, we do not deal in mental science, which is properly the sphere of the aspiring metaphysical intellect. If mental science is strictly synonymous with metaphysics, these objections are certainly valid, for although we do not eschew metaphysical discussion, the aim of this Journal is certainly bent upon more attainable objects than the pursuit of those recondite inquiries which have occupied the most ambitious intellects from the time of Plato to the present, with so much labour and so little result. But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science, mental physiology and pathology, with their vast range of inquiry into insanity, education, crime, and all things which tend to preserve mental health, or to produce mental disease, are not less questions of mental science in its practical, that is, in its sociological point of view. If it were not unjust to high mathematics to compare it in any way with abstruse metaphysics, it would illustrate our meaning to say that our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to the pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and, to a certain extent, attains immediate practical results of the greatest utility to the welfare of mankind; we therefore maintain that our Journal is not inaptly called the *Journal of Mental Science*, although the science may only attempt to deal with sociological and medical inquiries, relating either to the preservation of the health of the mind or to the amelioration or cure of its diseases; and although not soaring to the height of abstruse metaphysics, we only aim at such metaphysical knowledge as may be available to our purposes, as the mechanician uses the formularies of mathematics. This is our view of the kind of mental science which physicians engaged in the grave responsibility of caring for the mental health of their fellow men, may, in all modesty, pretend to cultivate; and while we cannot doubt that all additions to our certain knowledge in the speculative department of the science will be great gain, the necessities of duty and of danger must ever compel us to pursue that knowledge which is to be obtained in the practical departments of science, with the earnestness of real workmen. The captain of a ship would be none the worse for being well acquainted with the higher branches of astronomical science, but it is the practical part of that science as it is applicable to navigation which he is compelled to study."—Sir J. C. Bucknill, M.D., F.R.S.

THE JOURNAL OF MENTAL SCIENCE.

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PART I.—ORIGINAL ARTICLES.

*Atypical and Unusual Brain-Forms, especially in Relation to
Mental Status: A Study on Brain-Surface Morphology.*
By W. JULIUS MICKLE, M.D., F.R.C.P. (London);
President Medico-Psychological Association.

(Continued from Vol. xlii., p. 588, July, 1896.)

CHAPTER V.

TEMPORAL LOBE.

This chapter concerns the temporal, and the next the parietal lobe; but it is desirable to preface the main subjects of these two chapters by some remarks on a large area partly pertaining to both the lobes mentioned, and partly to the occipital.

On the external cerebral surface the temporal lobe is more or less fused with the parietal lobe and with the occipital. The demarcations are indistinct; the upper and posterior part of the temporal lobe and the inferior parietal lobule pass into one another insensibly, without any distinctly obvious line of division; and very similar is the union of the temporal with the occipital on the outer as well as the lower cerebral surfaces. Hence great diversity of recognition and identification of these parts; and the authorities on cerebral topography are hopelessly at variance as to the temporal parietal and occipital boundaries on the external surface of the brain, also as to some of the constituents and arrangements of each of these parts; for divisions of the lobes into lobules and gyres differ extremely, and, under each such division, the asserted arrangements and relations of the gyres and furrows necessarily assume a corresponding state of disagreement.

Let us for a moment refer to—(a) the question of the boundary limits of the lobes here; and then to (b) some subdivisions made into certain constituents; and to (c) the arrangement, individuality, and relations of the component cortical folds and furrows.

(a.) The limiting lines are defective, and if we follow the instructions given for marking the boundaries the results do not coincide either with the plates of the same authors or with areas on actual brains. *E.g.*, on the external surface, the temporal and parietal lobes are sometimes said to be divided from the occipital lobe by an imaginary line drawn from the parieto-occipital notch to the pre-occipital incision. But this would include in the occipital lobe part of the area which practically always is assigned to the parietal, namely, part of the angular gyre (*pli courbe*). And Dejerine in some cases makes the posterior ascending ramus of first temporal sulcus to be the line of division between parietal and occipital lobes, and Schwalbe made it the regular bounding line; thus leaving part of the parietal lobe in occipital territory. This is the anterior occipital sulcus of some schemes, but not of others; and is by some made a chief dividing line between parietal, temporal, and occipital on the external surface. A so-called “anterior-occipital” sulcus is very variable in position, development, and relations, and its use as a boundary line usually leads to annexation of some parietal territory.

Again, the upper boundary of the district particularly referred to here is part of the system of the “intra-parietal” sulcus (not well-named intra-parietal); and of this system the longitudinal part has been subdivided into a ramus horizontalis between the superior and inferior parietal lobules, and a ramus occipitalis for the occipital part of the reach of the continuation of the sulcus. This is most misleading. For the sagittal part of the sulcus certainly does develop in two pieces, the point of union of which is the only true point of division of that tract of the sulcus into two; and the so-called “occipital ramus” extends forward more or less into the parietal region. Hence confusion in description and idea must result. Therefore, in what follows I will divide the furrow-tract in question into an “anterior sagittal” and a “posterior sagittal” portion.

Although the temporal lobe fuses above with the parietal, a slight partial demarcation line may often be made of the lower terminal spur of the back-end of the Sylvian fissure, a

spur which varies much in direction and position, however ; and some demarcation may also be made by the horizontal continuation, or lower spur, of the main trunk of the first temporal sulcus.

On the inferior surface, the lack of limiting fissural lines led to the designation occipito-temporal for the gyres and sulci. While most assign the lingual lobule to the occipital lobe, Stark attributed both it and the fusiform to the temporal lobe. Wernicke deleted the external surface below the inferior occipital sulcus (of Ecker) from the occipital lobe, and added it to the temporal. Eberstaller made practically the same curtailment of the lower external surface of the occipital lobe. Independently of this, he also curtailed the external surface of the occipital lobe in front, by making its anterior limit to be the transverse occipital sulcus (of Ecker), thus placing the homologues of Gratiolet's first and second external parieto - occipital annectants of the ape's brain further back on the cerebral surface than most other investigators had done.

Here I may add that in some brains a sulcus runs on or close to the upper hemispherical edge at the junction of mesial and external occipital surfaces ; somewhat as the intra-gyral lingual sulcus sometimes lies on or about the junction of mesial and inferior cerebral surfaces.

(b.) and (c.) Descriptions of the divisions and the constituents of the area under discussion, and of the relations and arrangement of their several component elements are also conflicting and often irreconcilable.

Some ignore the posterior or postero-inferior reaches of the great system of the first temporal sulcus. And the so-called anterior occipital sulcus is a bone of contention. But the inferior parietal lobule, perhaps, will illustrate my point better ; and by inferior parietal lobule (not always used in the same sense) is meant, here, the part of the parietal lobe below the inter-parietal sulcus proper.

In *Man* this is a most complex and difficult region to study. What was simplicity in the ape has its homologues in what has become bewildering complexity in *Man* of highest brain-form. And the variance of view concerns both its gyral and fissural elements. Thus, it has been divided, practically, into two portions ; it has been attempted also to fix upon a dividing incision between them. But the subdivision into two is defective and will not work ; and the incision taken as marking the limits of the two is

variable in position and inconstant. The position, relation, and number of sulci intermedii of the inferior parietal lobule; the nature, relation, and origin of its vertical furrows; are among the matters in the interpretation of which confusion reigns.

The graceful curving lines of gyres coiling over the summits of upwardly trending furrows here, have led to other views; and Bischoff became the apostle of a division (foreshadowed by Gratiolet) into three successive arch-like convolutions. Indeed, there *are* three great arching cortex-folds in highly-developed brains. But a bold incision occasionally driving deeply from above, out of the inter-parietal sulcus, would necessitate a reversed arch also. And the leading recent champion of what one might call the tri-arcuate plan of the inferior parietal lobule is quite at variance with Bischoff as to part of the scheme.

Another division into three has been made; viz., into inferior parietal convolution (or lobule): lobule of the *pli courbe*: *pli courbe*;—to each of which an incision has been assigned and named after it. The attempt is laudable. But, to say nothing of the shifting relations of these gyral folds and sulci and incisions in different brains, we find that in the illustrative diagrams and plates of the same observer examples of these parts, obviously the same in reality, in different hemispheres, are sometimes differently named, so that each name shifts from a given object to another not correspondent to it. Then we doubt the accuracy of the indications offered for our use. And when we find, for example, that what is termed “the incision of the inferior parietal convolution” is, by the author of its name, derived, in different cases, from the Sylvian fissure, *or* from the first temporal sulcus, *or* from the inter-parietal sulcus, *or* is isolate and from none of these; we fairly question whether incisions of this versatile protean kind are reliable guides or landmarks. A better-named threefold division of inferior parietal lobule is that by Schäfer into supramarginal, angular and post-parietal gyri.

One chief reason for the irreconcilable discrepancies to which we have adverted is the attempt to set up imaginary lines of division and boundary where no natural division exists. I do not state here my view on the proper lobar division of the brain-surface, in Man, from the morphologic standpoint. That view differs profoundly from those usually held. But in the present series of articles it is pre-eminently

desirable to make use of the customary divisions and subdivisions, in order that the reader may immediately and precisely identify each part mentioned and place it in the scheme to which he is accustomed. Therefore, the use, in these articles, of the established lobar and other divisions is convenient; and it is not merely convenient, it is sufficient for the present turn. But I may state that I look upon that part of the external and inferior surfaces of the cerebrum lying between the Sylvian, intra-parietal, collateral, and calcarine furrows as being one of the areas resulting from a primary morphological division of the brain surface of Man; as being morphologically one, however much the different portions of it may differ in function. This extensive area includes, therefore, what are usually called the external and inferior surfaces of the temporal lobe; the inferior surface of the occipital lobe and the external, up to the inter-occipital sulcus; and the external surface of the parietal lobe up to the inter-parietal sulcus.

But the portion of this extensive area which requires to be more especially considered here comprises the inferior parietal lobule and the adjoining portions of the temporal lobe. And it is desirable to preface, both in this and in the next chapter, what is stated on the appraisement of deviations in form in these several parts by indicating some of the results of a study of the conformation of this complex region.

Of this region, therefore, we now turn to the temporal portion.

The First Temporal Sulcus: Parallel Sulcus: (t_1).

The human foetal development of the parallel sulcus seems to begin in the sixth month and to progress somewhat slowly, and, often at least, takes place in two pieces, one much better defined than the other. Then, later on, with the forward growth and movement of the temporal pole the early sulcus—which at first is usually behind the representative of the posterior horizontal limb of the Sylvian—draws forward, elongates both ways, and usually coalesces with regard to its several portions. But the anterior part of the sulcus, as it often exists in human adults, is late in appearing.

Although some of them are absent or slight in most brains, we may speak of five branches of the main trunk of the first temporal sulcus. Of these, three are ascending;

one is backward and downward; and one is downward (or downward and slightly forward). The two latter are subsidiary dependencies; are of secondary order, and subordinate.

As regards the number of *ascending branches*, the most frequent condition is that with *two* such; the next in point of frequency is that with *one*; much fewer have *three* distinctly identifiable ascending branches. But, for reasons which will subsequently appear, in many cases the identification of certain furrow-elements as pertaining to the first temporal is not absolutely clear, and the proportion of hemispheres with this or that number of branches will vary with the interpretation made.

When there are at least two ascending branches of the first temporal sulcus, the anterior, continuous with the main trunk, is frequently separated from the one behind by a small superficial portion of cortex, or by a partly sunken one; occasionally this gyrel is in the course of the posterior branch above its offset from the anterior one. The point of separation by the little bridge may be below the Sylvian fissure, when the posterior branch sets off from the main stem at that situation. Similarly, the main trunk of the t_1 may be separated by a gyrel from its downward and backward trending ramus. The anterior ascending branch may be interrupted in its course by a gyrel.

In certain cases some doubt may fairly be raised as to whether the posterior of the two or three ascending branches, apparently of the t_1 , may not be an element of the system of the second temporal sulcus, or at least whether it may not belong partly to t_1 , partly to t_2 ; i.e., be an outcome of a practical fusion of t_1 and t_2 in the region concerned. But I believe that the chief *posterior* ascending branch, as I describe it, belongs to the *first* temporal sulcus:—

(a.) Because either it, or the anterior chief one, or both, are often fully continuous with the main trunk of the first temporal sulcus; and

(b.) Because that main trunk occasionally gives off one ascending branch which subdivides high-up into two rami which make for or attain just the same areas of terminal distribution, and same relations, as the two chief ascending branches above-described.

In regard to the cutting-off, by gyrels, of anterior or of posterior ascending branch from each other at their visible origin or from the main trunk, one may note that in some

foetuses (seventh month) the t_1 is chiefly a groove separated from another piece behind the Sylvian end; that later on (eighth month) the t_1 may be interrupted by a superficial gyrel just below and behind the Sylvian fork, and, above and behind this, be continued by two upturns closely connected or tending to join. And in the orang the incision on inferior parietal lobule lying beside the posterior sickle of the temporal sulcus, and sometimes joining it, probably is the early representative and homologue of the posterior ascending branch of first temporal sulcus in Man.

When there are two ascending branches of the first temporal sulcus (t_1) they often both end—above—in front of the line of the parieto-occipital fissure; or one in front of, and one about opposite to, that line, or to the line of the spur skirting, frontwise, the meander immediately in front of the parieto-occipital notch.

Before it gives off ascending branches, the main trunk of the first temporal sulcus is not infrequently interrupted by gyrels which are more or less bridging. Of these the most important occur in the vicinity of the posterior forking, or end, of the Sylvian fissure, being either shortly in front of and below it, or (horizontally) opposite thereto. The main trunk is often similarly bridged, well to the front and not very far from the temporal pole. Occasionally, a division by anastomosing gyrel is between those two regions.

Several strong upward and backward coursing cortical folds may interrupt the first temporal sulcus, which may thus be divided into about three irregular sulci, upward and backward in general trend, and overlapping.

Very often spurs run out from the horizontal part of the first temporal sulcus to the second, or to the inferior hemispherical border.

The first temporal sulcus (t_1) may be long, and continuous, or almost so, throughout at least its middle and upper reaches; and in such case may be either well forward or lower downward and backward than usual.

The t_1 may have only a single stem, short and ending, behind, in a quadriradiate furrow. The main stem occasionally has no further reach than the end of the Sylvian, posteriorly. When single (unbranched) above, the stem may be in direction pointing slightly in front of the line of the parieto-occipital fissure; or on the other hand it may be directed well forward. Occasionally, the upper branch is short, low down, and nearly backward in direction.

A main stem, single above, may be neared by a spur, at the foot of its upturn, which spur runs back into an oblique forking sulcus which sends its upper limb towards the line of the parieto-occipital fissure; its lower one into the pre-occipital incision, and connects with the t_3 .

A single main stem may run a full length, and in this course give off only some short lateral incisions.

In some cases—rather than two ascending branches, properly speaking—there is 'practically one ascending stem which forks at a point well up; sometimes nearly opposite to the line of the parieto-occipital fissure.

In some examples a minor *third* vertical branch ascends behind two others; usually it is somewhat short and directed towards the line of the parieto-occipital fissure (*p.o.f.*), or thereabouts. A similar branch may be the hinder of the only two ascending rami, and, as a rule, trends in the direction of the *p.o.f.*; in some cases constituting a specimen of that which some would identify as the so-called anterior occipital sulcus.

Lateral braces sometimes connect some of these ascending branches of t_1 with each other. *E.g.*, a groove may connect the anterior with the posterior ascending branch directed towards the line of the *p.o.f.*

Either the anterior or the posterior of the *apparent* two chief ascending branches may communicate with the inter-parietal sulcus above, and be separated from the other branch, or main stem, by a gyrel. Thus, the anterior ascending branch may at first sight seem to be represented by a sulcus which, on examination, is found to unite with the inter-parietal sulcus, and is separated from the other ascending ramus of t_1 by a small partly sunken gyrel. Such branch might, at first, be taken as an incision from the inter-parietal sulcus, or, on the contrary, as a slightly disjunct branch of the t_1 , confluent with the inter-parietal sulcus. In one such example a short strong but abortive direct continuation of the main stem of the t_1 rose, between the anterior and posterior ascending furrows in question, from the common point of issue of all three. But sometimes this anterior ascending branch of t_1 is confluent with the inter-parietal sulcus, and yet *not* at all cut off from t_1 by a gyrel, but entirely continuous with the latter. I take it, therefore, as a branch of t_1 , under the circumstances just mentioned as possibly affording ground for difference of view.

Isolated furrows having the direction and course of the

usual upturn of ascending branches of the t_1 may represent the latter cut off from the parent stem. There may be two of them or only one. Thus, the main stem may zigzag far back and slightly upward, attaining a point about opposite to the line of the *p.o.f.*, giving off near its end a branch downward and backward to between the second and third external parieto-occipital annectants. In this case, a possible representative of the anterior ascending branch was a sulcus coming out of the Sylvian near its back end, a branch of the main stem of the t_1 in front having entered the Sylvian at the transverse temporal sulcus. Or the main stem of the t_1 may run backward and somewhat downward, sending off two ascending shortish rami directed, respectively, one to the line of the *p.o.f.*, and one in front of it: two isolated incisions in the usual flight of the ascending branches of t_1 being, probably, disjoined elements of the t_1 . Or, near and above and behind the Sylvian, an isolated spur may represent an element of t_1 .

The two ascending branches and the backward and downward branch may all start as from a furrow-confluence, but modified by the interruption of a sunken or superficial gyre. Or the posterior branch, or continuation, of the main stem trifurcates into (a) an upward spur entering the angular gyre; (b) a backward and slightly downward spur towards the line between the second and third annectants, or incising the second; and (c) a downward spur in direct line with the first-mentioned one (or "a"). These are divided off, by a continuous second occipital and second temporal gyre, from a highly marked pre-occipital incision, or from a furrow-confluence, below.

The posterior ascending branch of the t_1 may spring from ground common to t_1 , t_2 and t_3 . It is sometimes continued forwards, below and in front of its junction with an element from the main trunk of the t_1 , either for a short distance only, or nearly to the inferior edge and surface, and sometimes coming to join with pieces of the t_2 (or even of the t_3). Near the temporal pole, doubt may arise whether certain furrow-elements are of t_1 or of t_2 ; and in certain cases a similar question may concern the backward and downward, or the downward, branch of the t_1 .

A downward and forward spur may be given off, *below*, from the main trunk of the t_1 , nearly opposite to its anterior ascending branch.

The backward and downward branch ; and the downward branch ; of the first temporal sulcus.

These are due to changes and connections coming late in the evolutionary process by which the brain of modern civilised man has reached its present form. Either from the posterior ascending branch, or from it, fused with an element of the anterior ascending branch, there is often a backward and downward continuation or dependency of the t_1 ; and often a downward branch of the same order.

For a sulcus connected with the t_1 may run a short distance backward and downward, or even far down, to the lower posterior occipital region. It may be one of the twigs produced by forking of the posterior continuation of the main stem of the t_1 ; the other being directed towards the line of the *p.o.f.* It may have close relations to, or entirely unite with, the second, or inferior, occipital sulcus. To a greater or less extent it frequently intercalates itself between the second and third parieto-occipital annectants.

Again, a branch given off from the t_1 at about the same point as the one last described sometimes runs downward. In this course it seems to form what in some examples has been designated anterior occipital sulcus; or it may be a short spur. Or the main stem of the t_1 , or its posterior continuation behind the point of uprise of anterior ascending branch, may fork into (a) an upward branch in the axis of the angular gyre and (b) a downward branch.

Sulci similar to the two above described may, at their upper end, lie very near to, but not directly connected with, the posterior ascending branch of t_1 , and may extend in the one case to the lower posterior occipital area; in the other to the pre-occipital incision.

A hemisphere may seem to combine, or offer a transition phase between, the conformation of those with a backward and downward subsidiary branch, and those with a downward one; as, *e.g.*, that wherein a single main trunk and ascending branch of the first temporal sulcus gave off a backward and downward ramus which parted into two divaricating limbs, of which the upper ran between second and third parieto-occipital annectants, the lower zigzagged downward and forward to near by the pre-occipital incision and third temporal sulcus.

Second Temporal Sulcus (t_2).

This rarely presents the forms given in schematic representations of the brain-surface.

Sometimes it is very defectively marked. Often it is very irregular. Its most common form is that of chiefly horizontal pieces in front, but behind chiefly diagonal and directed downward and backward; or the horizontal and diagonal elements are freely intermingled; or occasionally the disjunct pieces have only one or the other of these directions.

At one end, or at both, the sagittal pieces are in some examples forked into spurs projecting beyond each sulcus-element and its point of forking: in others, they, with their retreating divarications, present barbed arrow-head outlines. Either with or without this shape, there may be a large irregularly H-shaped sulcus placed well behind; chiefly, at least, belonging to the t_2 system, but sometimes possessing an element of the t_1 also.

Occasionally, the t_2 has a better marked and more purely horizontal course than usual, thus coming to approximate its usual schematic representation.

Occasionally, it forms part of a stellate sulcus, or furrow-confluence, at the pre-occipital incision.

Third Temporal Sulcus (t_3).

The third temporal sulcus is usually on the inferior aspect of the cerebrum: part of it, however, often invades the external surface, either slightly, or, occasionally, to some considerable extent, and either by one or more of its separate pieces or spurs, or main trunk. It is particularly at the hinder part that this invasion of the external surface by the t_3 may occur, and hereabouts it very frequently joins the pre-occipital incision.

The t_3 is sometimes a very well marked sulcus, and more so than the t_2 (and therefore its furrow-connections more important). But in some cases the t_3 is ill-marked. This is particularly apt to occur when there is a seeming compensation by an unusually developed deep and bold intra-gyral sulcus of the fusiform lobule. Yet in some examples it is exceedingly difficult to satisfy oneself as to the validity of this explanation of the appearances observed; and the alternative possible explanation must be at least kept in mind,

and is to the effect that, in such case, the fusiform lobule is abnormally small, and that, after all, the sulcus in question is an irregular and unusually disposed t_1 .

Connected with unusual condition of gyres and furrows of external surface there may be a large lingual lobule and a small cuneus, and anomalies of the inferior surface, as, for example, a strong sulcus across the back part of the inferior occipital surface, from the point of junction of the pre-occipital incision and t_3 .

I have referred to a subsidiary branch of the first temporal sulcus sometimes contributing to the separation of the second and third external parieto-occipital annectant gyres.

In different human brains and hemispheres the dividing sulcus between these two gyres seems to possess very different *apparent* origins:—

- a. It may be the inferior occipital sulcus (of Ecker).
- b. There may be doubt whether it belongs to the t_1 or the t_2 .
- c. It may be from the t_1 ; in some cases separated or interrupted by a small gyrel.
- d. It may communicate with a seeming anterior occipital sulcus, which at least gets a spur from the t_1 .
- e. It may be a sulcus whose front end is just opposite and close to the point of forking of a posterior piece representative of t_1 .

When these two annectant gyres are recognisable in Man and there is a connection of the furrow between them with, or with some dependency of, the t_1 , I am inclined to think:—(1) That the said furrow represents an element of the external calcarine sulcus of the anthropoid; that this last-named sulcus in the course of evolution comes to join with an element of the late-evolved “backward and downward” subsidiary branch of the t_1 ; (2) Further, that this last branch has close connections with, and proceeds from the same evolutionary process as, the “downward” subsidiary branch of the same. (3) Further, that the external calcarine sulcus of the anthropoid is in part represented by, and antecedes, the inferior occipital sulcus (of Ecker) in Man.

The Anterior Occipital Sulcus (so-called): (o.a.).

In some cases this anterior occipital sulcus (*o.a.*) is connected with irregular or with ordinary elements of the t_2 ; or occasionally it is joined by a sulcus-element on the external

surface as to which it is not clear whether it belongs to the t_2 or t_3 .

When present, if it is in the line of an imaginary continuation of the t_2 , it takes quite a different direction from the downward-and-backward-set pieces of the t_1 lying nearby and in front of it.

What some recognise as "*o.a.*" is, in certain cases, low down, isolate on external surface, usually joining the pre-occipital incision and the t_3 .

But what others identify as the *o.a.* is placed high up, behind and somewhat parallel to the nearest ascending branch of the t_1 . As a rule at least, it is not directly connected with the t_2 . Yet by some it has been taken as a continuation of t_2 , or a terminal piece in the flight of the t_2 . On this view, it would seem as if the t_2 took on, as a substitute, the rôle of the t_1 in this region. In these and somewhat similar cases, however, it (*o.a.*) may give off a backward and downward spur which may be connected with irregular sulci at the lower posterior area of external occipital surface, or may pass between the second and third annectants; or it may receive a furrow from the t_1 . These dispositions raise the question whether, in such cases, the so-called anterior occipital sulcus is not, in reality, an element or dependency of the t_1 .

In other examples, the t_1 gives off a sulcus situate low down—and just like, in fact identical with, that recognised as anterior occipital sulcus by some observers—which in certain instances joins the pre-occipital incision, or the t_3 , or both. Or the t_1 divaricates into furrows, one of which represents the above-mentioned, alleged, and low-set form of *o.a.*; while the other represents the other above-mentioned, alleged, and high-set form of *o.a.*, situate in the axis of the angular gyre; but the two being continuous in this case.

An apparent *o.a.* may be near, but not in actual union with, the backward and downward spur of the t_1 .

Or an alleged *o.a.*, at its upper end unites with the horizontal backward continuation of the trunk of the t_1 (like a T); and at its lower end forks, the anterior prong joining the pre-occipital incision.

Occasionally, a sulcus (*o.a.?*) zigzags from opposite to the posterior end of inter-occipital sulcus to the pre-occipital incision.

A low-set sulcus, directed upward and forward, like an anterior occipital sulcus (*o.a.*) in position but not in direc-

tion, *may* possibly represent the lower terminal cross-piece of the ape-cleft in anthropoids.

The anterior occipital sulcus was designated by Eberstaller the ascending ramus of the second temporal furrow. This relates to what I have spoken of above as "the high-set form of an alleged anterior occipital sulcus." This view of his was founded upon a consideration of the furrow behind the ascending part of the parallel sulcus in the orang-outang, and of the so-called anterior occipital sulcus in Man. And being, he alleges, to the ascending *ramus* of the first temporal sulcus, of relation analogous to that which the second is to the first temporal *sulcus*, he terms it ascending ramus of the second temporal furrow.

On this point it is not necessary to reproduce here the facts and arguments brought forward in preceding pages to show that the sulcus under discussion is a posterior ascending branch of the first temporal sulcus.

UNUSUAL ABERRANT FORMS OF TEMPORAL GYRES AND FURROWS.

We may now briefly refer to marked deviations from usual forms of gyres and furrows in the temporal region.

First and Second Temporal Gyres and Sulci.

These may present an abnormal variant of the normal issue of the deep, or transverse, temporo-parietal annectant gyri (and deep temporal sulcus) from the first temporal gyre; so that the external surface-substance of the latter, or a large portion of it, turns from forming part of the lateral aspect of the temporal lobe, twists sharply, plunges into, and entirely disappears in the Sylvian fissure, and therewith the parallel sulcus usually becomes seemingly continuous with the deep temporal sulcus and loses its way in the Sylvian gutter. In the very great majority of examples this deviation is in the *left* cerebral hemisphere: but it may affect both left and right hemispheres of the same brain. Occasionally, this deflection of part of the first temporal sulcus into the Sylvian fissure seems to be compensated by an, otherwise, isolated spur issuing from the Sylvian near its back-end: and perhaps representing and compensating for an anterior ascending branch of the first temporal sulcus.

Or the parallel sulcus (t_1) may fork, one prong entering the Sylvian fissure as just described, the other representing the

posterior continuation of the sulcus (t_1), or joining a sulcus representing such posterior continuation, and situated somewhat lower down than usual.

In either case a variety of aberrant conditions—which also may occur quite independently of association with the aberrant form of gyre and sulcus at the present moment described—may concern the representative of the true posterior continuation of the parallel sulcus (t_1), which may restart immediately behind a bridging anastomosing gyral fold between the first and second temporal convolutions. For it, or a ramus of it, may zigzag to the inter-parietal sulcus—sometimes at about opposite to the parieto-occipital notch; or may nearly attain the mesial hemispherical surface; or may even enter a transverse occipital sulcus. And it may, as well, also send an up-curve in the more usual direction and position of its anterior ascending ramus. Or the lower and posterior ramus may appear to join a posterior continuation of the second temporal sulcus. The large area within the range of these rami may be much, and very irregularly, convolute. And all these unusual conditions of the sulcus (t_1) may occur, also, in cases free from the aberrant form of the gyre and sulcus with which we began.

The *first temporal gyre* and upper edge of second may be partly divided by fissurets running upward and backward, the first temporal sulcus being in segments so disposed; and much more often the *second temporal gyre* is partly divided by fissurets directed downward and backward, such practically representing the second temporal sulcus. Thus the disjunct pieces of the latter gyre and sulcus are disposed at about a right angle to those of the former. In such cases both these temporal furrows are more or less defectively marked.

The *first temporal sulcus* may be very long; or may be irregular, zigzag, badly marked. It may fork and sub-fork overmuch; or join a zigzagging sulcus intermedius; or divide and rejoin so as to enclose an islet in its channel; or an area of cortex is shallowly insulated by the conjunction of branches of the first and second temporal sulci. It may have unduly vertical position, or undue extension backward or upward. It may be in several portions either distinct and irregularly set, or these may be so connected, shallowly, at stations where deep anastomosing gyrels cross, as to confer a rough zigzag appearance on the sulcus (t_1). Or it may be represented by disconnected sagittally directed sections only; and this may co-exist with the next condition. Its hinder

end's anterior ascending ramus may curve sharply upward and forward ; it may even thus seem to curtail the supra-marginal gyre, or a fish-hook-like branch of it may curve forward and divide that gyre into two tiers.

The *second temporal sulcus* may have various irregular connexions ; owing to confluences, may appear to zigzag nearly to the occipital pole by conjunction with the inferior occipital sulcus (of Ecker), or otherwise. It has already been stated that the second temporal sulcus is, on the average, far less defined and bold than in many schematic figures it is made to be, or than it is in many brains selected as illustrations, which therefore are, so far, misleading. But from what has been observed one may equally reject the opposite extreme pole of opinion (represented by Sernow), namely, that the second temporal sulcus is merely a casual secondary furrow.

~ *Commentary.*

That which, speaking in terms of external appearance only, I have described as a variant of the normal relations of the deep temporo-parietal annectant gyres and deep temporal sulcus to the first temporal convolution and parallel furrow ; is a deviation which, other things equal, I was inclined to take as a departure from the usual brain-pattern in the direction of increased formative activity, and, although a deviation from type, yet not a sign of inferiority.

Yet there are some considerations, not to be ignored, which tend the other way. Thus, in some foetal brains at the age of six or seven months a condition may be observed which seems to be the promise of something similar to the deviation in question. And it may be that this same condition favours the possibility of the bridging over of the Sylvian cleft, at this point, from the first temporal gyre to the posterior central gyre, as seen in an adult microcephale.

Passing from this to the first temporal or parallel sulcus (t_1) :—

A long course of the parallel sulcus (t_1), or of one or more of its rami unusually far towards the upper or posterior hemispherical border ; unusual irregularity of the sulcus or zigzag course ; unusual degree of forking and sub-forking of it ; islet formation in its channel ; sharp upward and forward curve of the back end and anterior ascending ramus thereof, as in *some* foetuses, insane persons, criminals and negroes ; an unusually vertical (transverse) position of the sulcus, as

in some idiots, including some of microcephalous type :—all seem to be signs of inferiority, and either mark inferior evolutionary status, or the uncommon persistence of foetal characters owing to developmental failure ; as the case may be in the particular cerebral hemisphere concerned.

Other aberrant states of temporal gyres and sulci are the numerous confluences of the parallel sulcus (t_1) with other furrows, indicating defective development of the anastomosing gyres in the area of the posterior external superolateral cerebral aspect, where these confluences chiefly occur. Or the presence of a very marked temporal incision (of Schwalbe) as in some microcephali.

If the gyrels crossing temporal sulci are deeply sunken and slight, or absent, the gyres are of simple type, present an unusually sagittal aspect and connote inferiority. But with gyrels which are usually much submerged rising to the surface the richness of folds and anfractuositities is enhanced, and the aspect of the trend of gyres is more transverse.

The condition of the convolutions, chiefly the first temporal, produced by breaking up of the first temporal sulcus (t_1) into fissurets ordinarily directed obliquely *upward and backward*, in parallel overlapping series, and not in rectilinear disposition, may be judged of by the accompanying attributes of its context. If this last indicates inferiority so may the condition itself, and this is the usual case. Moreover, this fragmentary state of the sulcus may represent, or partly so, persistence of a foetal character.

But the condition may bear a different meaning if the "context" is that of superiority.

Very similar remarks apply to the partially like uncommon form of the second temporal gyre and sulcus when the latter is represented only by a set of fissurets directed downward and backward. Here the direction is different from that of the fissurets mentioned in the last paragraph.

A bold deep simple parallel sulcus (t_1), curving well forward as well as upward, and giving off one or two spurs downward or backward from its posterior curving two-fifths, marks a tendency to anthropoid forms, and, other things equal, indicates a reverting tendency.

Marked non-symmetry of development of temporal gyres in the two hemispheres of the same brain has been found in some cases of deaf-mutism, and of moral imbecility.

Stunting of the temporal tip ; shortening of its normal forward bold projection ; dwarfing of its opercular formation

generally; tell of developmental hinderance, at least, and possibly of reverting tendencies as well, in some examples.

A highly marked so-called anterior occipital sulcus (*o.a.*) may occasionally be seen in the eighth month foetus; exists in some lunatics; is recorded in some insane delusional criminals.

To make the separation of the ascending terminal ramus of the first temporal sulcus—likewise that of the Sylvian fissure—to be something quite characteristic of the orang and human brain, was attempted by Eberstaller. But this separation is absent in some cerebral hemispheres of the orang, and it is more frequent and marked in human foetal than in human adult brains.

Interruption of the first temporal sulcus by a gyrel beneath the Sylvian posteriorly, with a disjunct anterior ascending branch, has been mentioned. It resembles the condition observed in one foetus at the latter part of the eighth month.

Other things equal, a well-developed *third temporal sulcus* denotes superiority.

In a form of "family disease" I have observed, of which early blindness is one constituent, both the lingual lobules (*gyri occipito-temporales mediales*) were relatively small and only slightly and irregularly furrowed.

CHAPTER VI.

PARIETAL LOBE.

Of this the posterior central or ascending parietal convolution will be taken in a separate chapter, together with the anterior central gyre and the fissure of Rolando.

At the beginning of the last chapter the discrepant views as to the frontiers of the parietal lobe were incidentally discussed in connection with those relating to the temporal lobe, and on that subject, and the divisions and constituents of the inferior parietal lobule, much was stated there which otherwise would require attention here.

The Incisions downward from the Inter-parietal Sulcus (i.p.).

The incisions downward from the inter-parietal sulcus, or its conjoint stem with inferior post-central sulcus, into the inferior parietal lobule (of Ecker), including its "foot of insertion," are chiefly three; an anterior, a middle, a posterior.

If a fourth one (or more) exists behind, it is usually beyond the lower parietal region, and therefore need not be considered here.

But, even confining attention to the inferior parietal lobule, it scarcely need be said that the three mentioned are not present in every case. In a given brain hemisphere, one or two of them, or all three, may be absent; at least as regards any well-pronounced form, although slight notches sometimes indicate the rudiments of incisions.

Moreover, their position when they do exist is often not typical; the position of an incision may be intermediate to that of two of the typical incisions; an incision may be backset, or may be thrust forward, by the conformation and developmental type and lines of activity possessed by neighbouring parts. In a given cerebral hemisphere it may be difficult to identify a particular incision seen.

The first, or anterior, which I describe, is well forward; is behind the anterior lower stretch of the conjoined inter-parietal and inferior post-central furrows; and cuts into the supra-marginal gyre, or into the so-called foot of insertion of the inferior parietal lobule. As a rule, it is comparatively small.

The second, or middle incision, lies further backward, is behind the line of the (imaginary) continuation of the upper posterior end of the Sylvian fissure, and near the region of the anterior ascending branch of the first temporal sulcus. It is often deep and bold.

The third, or posterior, is directed towards some point between the lines of the two ascending branches of the first temporal sulcus (t_1), that is to say when these exist in typical form. It is often deep and strong. Its length and size are often inversely as that of the second, as if in compensation.

When it exists, a fourth incision behind the last-described one is not fully within the scope of the present subject, and is variably beyond, or near the frontier of the parietal territory.

The anterior one is infrequent in marked form. The middle one is frequent; as also is the posterior; and these are about equally so.

When only one incision exists it may correspond to the second or to the third (*i.e.*, the middle or posterior) incision above-described; or occupy an intermediate position.

When no incision downward from the inter-parietal exists in man, the condition, so far, is like that of higher apes (baboon, chimpanzee, orang).

Isolated Incisions on the Inferior Parietal Lobule.

Isolated incisions, sometimes bold and deep, are not infrequent just above or behind the posterior end of the Sylvian, be the latter forking or simple ; and near by them may be incisions from the inter-parietal sulcus. Their shape differs ; their direction likewise varies much. Sometimes they are set in the flight of an (imaginary) upward continuation of the Sylvian end, like a shallow Sylvian fissural continuation, cut off from the parent stem ; nay, a slight groove may shallowly continue from the deep Sylvian end almost to the inter-parietal sulcus.

Isolated incisions may exist also about the middle of the inferior parietal lobule, or on the angular gyre. They often are nearly vertical in direction. Incisions set obliquely upward and forward sometimes cut across ascending branches of the first temporal sulcus, or across an ascending spur from the Sylvian, thus making radiate sulci.

Spurs from upper side of Inter-parietal Sulcus.

From the upper side of the inter-parietal sulcus, towards the upper hemispherical border, two spurs, issuing from the same point, may run at about a right angle to one another, one like a far-back transverse parietal sulcus, and one towards the upper end of the posterior central gyre. Such a form is observable in some apes (orang ; also slightly in chimpanzee).

Representatives of the transverse parietal sulcus, in the orang and chimpanzee, are obliquely backward and inward set incisions ; simple, barbed, or stellate.

Bridging Gyres of the Inter-parietal Sulcus.

Oblique or horizontal gyres in some cases join the post-central gyre to the inferior or to the superior parietal lobule, and affect the course of the inter-parietal sulcus ; indeed, may, respectively, cut off the inter-parietal sulcus from the inferior or from the superior post-central sulcus.

But the inter-parietal sulcus is often bridged by one or more vertical anastomosing folds between adjoining parts of superior and inferior parietal lobules. Of these, the most frequently superficial and the most important is the anterior, immediately behind the post-central sulci, and when rising to the surface it shuts these off from the main sagittal stem of the inter-parietal sulcus. When superficial it is a factor

in the production of the condition in which there is an appearance like that of a second fissure of Rolando; wherewith the inter-parietal sulcus is cut off from the post-central furrows.

The posterior vertical anastomosing fold across the inter-parietal sulcus is less frequently superficial or bridging than the anterior, but is an important landmark and indicates the point of separation (or of junction) of the two developmentally distinct sagittal portions of the "intra-parietal" sulcus system.

A third one hitherto scarcely, if at all, recognised should also be mentioned, I think; namely, a middle vertical anastomosing fold, yet very seldom becoming superficial.

Angular disposition of sagittal parts of Intraparietal Sulcus.

In some cases the sagittal part of "intraparietal" sulcus consists of two pieces at a right, or only slightly obtuse, angle to each other. The two pieces thus disposed are sometimes also separated from each other, so that the inter-parietal sulcus is interrupted by a bridging posterior, or middle, vertical anastomosing fold. The two pieces usually represent what I term the anterior and posterior sagittal portions of the "intra-parietal" furrow group.

This disposition of the sagittal segments of the inter-parietal sulcus reminds one strongly of the simian appearance, as in cebus; orang; chimpanzee. In these, the inter-parietal sulcus incurves strongly towards the upper hemispherical border, from which, however, it is separated by a considerable distance. The point of this mesially directed angle may be marked (chimpanzee) by interrupting gyrels, sunken or superficial, showing the point of union of the two sagittal elements of the "intra-parietal" sulcus; or may give off two spurs, one forward and inward, and one backward and inward (orang).

Occasionally the inter-parietal sulcus is *irregular and ill-marked*; or is *broken up* and difficult to identify.

Unusual furrow appearance.—Reduplication of Inter-parietal s. (i.p.).

In several brain-hemispheres (right and left) I have found a sulcus perhaps homologous to that sometimes seen in chimpanzee and coursing somewhat antero-posteriorly beneath the (apparent) inter-parietal sulcus. In human

brains that sulcus may be curved with concavity downward. Coexistently, may or may not be the angular disposition of the two sagittal portions of the "intra-parietal" sulcus already described;—or a superficial anterior vertical anastomosing fold partly from superior parietal lobule, partly from post-central gyre, and joining (not supra-marginal gyre, but) the lower part of the superficial posterior vertical anastomosing fold.

Apparently there is some degree of reduplication of the inter-parietal sulcus. The lower furrow may represent the anterior part of an anomalous inter-parietal sulcus, unusual in position, direction and relations, and cut off by a stretch of cortical surface from the upper furrow, which latter represents the posterior portion of the inter-parietal sulcus, and, in front, is cut off from the post-central sulci, although it may join a transverse parietal furrow-element; while, behind, it has the aspect of the posterior sagittal portion of the "intra-parietal."

But more pronounced *partial reduplication of the inter-parietal sulcus* may occur. Thus, in one example there is reduplication of the inter-parietal sulcus in front; both the duplicates are separated from the post-central sulci; the three post-central sulci (yet to be described) are all separate. The lower representative of inter-parietal sulcus is unbranched ends at a gyre which separates it from the shaft of the upper representative of the sulcus. This upper representative of the inter-parietal sulcus takes on, in simple form, the function of an inter-parietal sulcus in the posterior half of its course; but in front it is thrown high-up and has an end-spur (by joining a transverse parietal furrow-element?).

This marked antero-posterior division, or partial division, of the superior parietal lobule by a sulcus or sulci nearly parallel to the upper hemispherical border, is comparatively rare, and marks irregular and inferior conformation.

A sort of furrow-confluence may be formed by junction of the inter-parietal and post-central sulci; sometimes thence springs a downward or a forward spur, or both; and in their midst a more or less submerged islet. Bischoff appears to have been the first to notice such.

SUPERIOR PARIETAL LOBULE.

Passing to unusual conformations more exclusively:—

It has already been explained how this lobule may be more or less divided by a furrow chiefly antero-posterior in direction.

Transverse sulci may partly divide, or divide, the superior parietal lobule into several sub-gyres, and may reach the mesial aspect. More often one, two, three or four oblique sulci partly divide the superior parietal lobule into several sub-gyres. These sulci run obliquely backward and inward towards, or to, the hemispherical edge, or thence over the cliff, in some instances descending more or less on the mesial quadratic surface in the abyss of the great longitudinal chasm. Some of the above may be connected with the inter-parietal sulcus, or with branches of the first temporal sulcus.

The unusual degree of sub-division of this lobule by fissurets running from its front and external part obliquely inward and backward, which I found in a number of instances, is a deviation from usual form due to increase of developmental activity on the usual normal lines, which, more often at least, is in the direction of superiority.

INFERIOR PARIETAL LOBULE (OF ECKER).

The gyres of the inferior parietal lobule are sometimes extremely volute, or as if in whorls, or balled together, and marked by many curving grooves.

This lobule may be much and irregularly divided by subordinate furrows, unusually developed; or by extra incisions; or by spurs from inter-parietal sulcus; or by bi- and tri-furcation, or unusual and prolonged extension of furrows, of the first temporal especially: also by irregularity and zigzag state of inter-parietal sulcus, or of a far-descending representative of an external limb of the parieto-occipital fissure, or of sulcus intermedius, or even transverse parietal (or other) sulcus from the great inter-hemispherical cliff, and cutting now across the inter-parietal sulcus, or at least confronting an incision from it downward into the inferior parietal lobule. Important, here, is the first temporal sulcus with its abnormally zigzagging extensive course, branchings and spurs; also its frequent or numerous confluences with some or other of many sulci.

The frequency of unusual confluence of inter-parietal sulcus with various other sulci in brains of atypical conformation merely requires formal mention—as, *e.g.*, with parieto-occipital, first temporal, Sylvian.

INTER-PARIETAL SULCUS.

In endeavouring to obtain some guidance from *fœtal* states of the inter-parietal sulcus, one finds a bewildering variety of these conditions of fœtal development, as to the relative earliness or lateness of appearance, and as to the relations of conjunction and disjunction, of the several elements of the great "intra-parietal" furrow-group. This is the outcome of an examination of the plates of Wagner, Pansch, Ecker, and, very recently, of Cunningham and Brissaud. Therefore, one relies but little on any conclusion drawn solely from fœtal development of the inter-parietal sulcus and its annexes.

From some of the older delineations, the impression was derived that the now so-called inferior post-central sulcus and the sagittal part of the "intra-parietal" develop together, and in union, in the human fœtus; and that the superior post-central sulcus probably is a distinct and separate sulcus, or at most an adjunct of the inter-parietal, and not essentially a part of it. But, as Cunningham finds this arrangement in about one-fifth, only, of adult human brains, and one-third of full-term fœtus brains, it cannot have the significance formerly supposed, though the development of the inferior post-central sulcus and sagittal portion in union is admitted by him to mark the primitive type.

Although sometimes at first represented in the human fœtus by one only of the pieces, the main sagittal trunk of the "intra-parietal" sulcus-system in later fœtal life is usually, but by no means always, in two sections, which correspond, in the adult, to those designated in this article "the anterior and posterior sagittal portions," and are separated by interrupting cortex a little in front of the parieto-occipital frontier, as a rule, but strongly tend to unite during the last month or more of fœtal life and for a short time after birth. So that while separate in two-thirds of eighth-month fœtuses, they are separate in but little more than one-third of adults. At this point, a bridge in adults, especially if associated with a "context" of degeneracy, might plausibly be accepted as meaning undue persistence of fœtal character and be taken for a sign of inferiority; whereas either here or in front of this point the inter-parietal sulcus, proper, is often bridged, and this may be associated with high convolucional richness and good well-endowed brain. And absence of bridging gyres across the

sulcus, together with considerable depth, boldness and definition of the latter, associated with a "context" of simplicity, is a sign of inferiority. Indeed, a relatively bold, deep "intra-parietal" sulcus, uninterrupted or nearly so by deep or superficial gyres, reveals a simian character.

But *superficial position* of the usually deep anastomosing gyres, in the inter-parietal sulcus proper, connecting the inferior and superior parietal lobules, and very especially of the gyre dividing, or tending to divide, the anterior from the posterior sagittal portion of the sulcus, has been held by at least one observer (Benedikt) to denote undue persistence of a foetal character, and therefore atypical form. Nevertheless, I believe the true interpretation is otherwise, and that, other things equal, this bridging of the sulcus in reality marks superiority of brain-evolution. And absence of any gyral interruption of this sulcus is comparatively more frequent in the idiot's brain than in that of the ordinary person (Wilmarth). Yet I admit that I have often found this sulcus bridged in imbeciles and idiots.

In Man an unusual depth of the inter-parietal sulcus relatively to that of the central fissure (Rolando's) would mark inferiority due to phylogenetic reversion.

In some brains of inferior form I have found the inter-parietal sulcus mount with a bold sweep on the superolateral external cerebral aspect, presenting its convexity towards the upper hemispherical edge, and then posteriorly—in its posterior sagittal portion—curve sharply backward, outward and downward; much as in some ape-forms, even lower ones; this hind-end perhaps representing the lower limb (here predominant) of the transverse occipital sulcus, the upper limb thereof being rudimentary, or walled off by a gyral fold.

In negroes, A. J. Parker found bridging of the inter-parietal sulcus fail in five out of thirteen examples; and the sulcus itself well-developed.

This sulcus has been alleged to be the same in criminals as in persons of low intellect.

Rüdinger's views on the direction and degree of curvature of the sulcus in relation to the development of the first external parieto-occipital annectant gyre, have already been dealt with under the head of the occipital lobe (Chapter IV.), and that discussion need not be repeated.

The sulcus intermedius (of Jensen) is freely criticised by

Eberstaller, who, like Bischoff, attempted to make the inferior parietal lobule (of Ecker) consist of three arcuate gyres, although he wholly differs from Bischoff as to the hindmost of these three. The anterior arcuate gyre caps the ascending-posterior end-branch of the Sylvian fissure; the middle one curves around the ascending end-branch of the first temporal sulcus; the hindmost caps the so-called anterior occipital sulcus, which he takes to be the posterior terminal piece of the second temporal sulcus. Borrowing the name from Jensen, but applying it to things quite different, he says the sulcus designated by himself as anterior sulcus intermedius is, not seldom, the ascending end-branch of the Sylvian fissure; and that the posterior sulcus intermedius not seldom is the ascending end-branch of the first temporal sulcus. This displacement in the furrow-anastomosis he attributed partly to the length of the Sylvian fissure and partly to variations in the height at which the ascending terminal furrow-elements develop. With a longer posterior horizontal Sylvian limb the curve over of the first temporal gyre into the supra-marginal lies further back and influences the determination as to which may be the vertical furrow-element with which the horizontal part of the first temporal sulcus comes to anastomose.

He also virtually takes the sulcus intermedius of Jensen to be merely the separated ascending end-branch of the first temporal sulcus.

In *Cebus capucinus* the first temporal sulcus coalesces with the Sylvian fissure behind, and their conjoint continuation upward and backward is a single furrow. In *Cynocephalus anubis* the junction of Sylvian and temporal sulcus occurs at a still more anterior point, and the back-going representative of them both is long and isolated. In the *Macaque* they usually do not join and the single arch of cortex becomes a slightly developed pair of arches; which in the higher anthropoids become two well-defined distinct arches. In *Man* the windings and arcuate forms have become much more complex, whichever of the various subdivisions of them made, or interpretations put upon them, is adopted. The general result is that in *Man* an enormous and rich lower parietal development has occurred; in every quarter the inferior parietal region has become strong and aggressive, it has thrust aside opposition, and has swollen in

an opercular expansion as an emblem of domination over adjoining cortical realms.

A rich complexity of the cerebral folds and furrows in the parietal lobes, if on fairly regular lines and not too atypically irregular, indicates superiority in form. But in many brains, otherwise, or in some other respects, of inferior form, there is a richness of parietal gyre-and-furrow-development, but it is irregular and extremely atypical. It is this irregularity and bizarrerie of the outward architectural conformation and relations of parietal areas which, on the whole, have been of greater morphological importance—as denoting aberration from usual form or from type—in the brains I have seen, than has an undue and atypic simplicity, or defective complexity, of the same parts.

Long ago (1854) Gratiolet attributed a great importance to parietal conditions as marking the human brain, and even as distinguishing it from that of the nearest to him in the animal scale. And this was more particularly as regards the lower part of the lobe, now often named the inferior parietal lobule. For he held the gyres, on the external surface annectant between, on the one hand, the parietal and temporal in front, and on the other, the occipital behind, to constitute—in virtue chiefly of their superficial position—one of the characteristics of the human brain; the greater part of the supra-marginal gyre—or lobulus supra-marginalis of Ecker—equivalent to his “pli marginal supérieur” and “lobule du pli marginal supérieur” having also, according to him, a very similar and especial significance.

And it has also been said that he looked upon the normal human brain as being characterised by the presence of “secondary convolutions” from the same part “which blend with the superior annectant convolution.” But what Gratiolet says and figures in his work is somewhat ambiguous. “Often from the summit of this lobule arise one or two accessory convolutions (‘B’) mounting to the superior annectant convolution.” In the figure to which he refers on this point the “B” marks what is now sometimes termed the first or anterior vertical anastomotic convolution, in this example superficial, uniting the antero-inferior part of the superior parietal lobule or convolution with the supra-marginal gyre. As the former of the parts thus united is Gratiolet’s “lobule du deuxième pli ascendant”; and not

his "*pli de passage supérieur externe*"; his somewhat loose statement in reality probably refers in part to the second or posterior of these vertical anastomotic folds, which, more usually, at least, springs from the angular gyre than from the supra-marginal. These folds are, respectively, the anterior and posterior anastomosing gyres from inferior to superior parietal lobule (of Ecker).

The great contrast that he observed was between the brain of the lower ape with an occipital operculum overhanging the *pli courbe*, or angular gyre; and the human brain with the several bold superficial annectant gyres effecting the transition between occipital gyres and parietal, and with total disappearance of the simian operculum.

In more recent times the importance of these last annectant gyri has been emphasised by Mihalkovics, Wernicke, and Rüdinger. The last-named dwelt on the occurrence of the greatest complexity of parietal folds being in men of greatest intellect, and he connected this complexity, and the lobe, with intellectual activity. And under another heading, in the fourth chapter, I have already noticed the relatively high development of the lower parietal lobule in brains of superior type, although I declined to belittle, on this ground, the value of certain occipital evolutionary changes culminating in Man.

Nor is the upward the only direction in which the inferior parietal lobule tends to increase as we ascend the evolutionary scale in its highest grades. For in these the tendency is for the posterior part of the Sylvian fissure to be ever more and more shortened by the successful struggle for the surface waged by gyres which are submerged in animals lower in the scale of primates; this rise of gyres to the surface obliterating the back part of the Sylvian fissure and increasing the parietal territory. A somewhat similar process shortens the first temporal sulcus above and behind. The parietal lobe also tends to overhang the occipital lobe, behind; and the frontal lobe in front; the inferior parietal lobule tends to overhang and dominate the superior one. The angular and supra-marginal gyres—or, better, the tripartite divisions of the inferior parietal lobule—in the course of this evolution attain to considerable size and great complexity.

I have noted a *relatively* small supra-marginal gyrus in

some brains otherwise, or in some respects, of inferior conformation.

In an insane murderer Mills observed the angular gyrus imperfect on one side; and associated with simplicity of parieto-occipital region. But in some murderers this and the rest of the inferior parietal lobule have been found well-developed.

General relative smallness of inferior parietal lobule, and defective opercular character of it, denote both defective development, and reversion in type.

In negroes A. J. Parker reported the parietal lobes to be less marked with secondary sulci than in whites; and in one case a supra-marginal gyrus absent!

POST-CENTRAL SULCI.

The post-central sulci are held by some to be part of the "intra-parietal" sulcus-system.

A condition frequently observed is that wherein the two post-central sulci are confluent with each other, but distinct and separate from the inter-parietal sulcus proper. Sometimes the confluent post-central sulci are also united with the inter-parietal. Many other hemispheres show not only confluence of superior and inferior post-central sulci, but also more or less confluence, therewith, of the transverse retro-central sulcus (of Eberstaller) below, and joining them with the Sylvian fissure. In the majority of these examples the confluent post-central sulci are separate from the inter-parietal.

The inferior post-central sulcus, when separate from the superior one, may enter the Sylvian by mediation of the transverse retro-central (or post-central) sulcus; and, therewith, either have conjunction with, or be disjunct from, the inter-parietal sulcus.

This transverse post-central element, cutting out from the Sylvian deeps, may be separate from the inferior post-central sulcus; it may groove a course into the central (or Rolandic) fissure.

Co-existence and isolation of all the three post-central furrows already mentioned are occasionally to be observed. In a few cases the post-centrals are extremely irregular and odd in form.

When the superior and inferior post-central sulci are isolated there occasionally exists between them a groove from the inter-parietal sulcus crossing the posterior central

gyre almost into the Rolandic fissure and flanked by two slight anastomosing gyres, of which the upper and lower pass from the posterior central gyre to the superior and inferior parietal lobule, respectively; or to the (superficial) anterior vertical anastomosing fold (of *i.p.*), which also, in that case, is grooved by the spur from the inter-parietal.

A condition which, so far as it goes, seems to mark a fairly good position, or even a decided tinge of superiority, is that of a well-marked upper post-central sulcus together with its tendency to a comparative degree of union with both the lower post-central sulcus and the inter-parietal proper.

In general terms, confluence of the several elements of the "intra-parietal" sulcus group stamps the adult European brain; and separateness the foetal.

A condition of the post-central sulcus-group which occasions an appearance as of another central fissure behind the true one—and this by conjunction of inferior and superior and transverse post-central sulcus-elements, and their complete separation from the inter-parietal proper—from certain points of view might be taken to indicate inferiority; from others superiority; and opinion upon its significance is reserved here. Yet in an inferior brain with this condition both the anterior and posterior vertical anastomosing gyrels may be superficial. A highly developed and superficial anterior vertical anastomosing gyre between inferior and superior parietal lobules may also give rise to an appearance as of three central gyres, besides conducing to a semblance of two central fissures. In fact, strong development and superficial position of the chief gyrels of the inter-parietal sulcus give a more transverse aspect than usual to the convolucional arrangements in this region.

The formation of a long post-central sulcus like a central fissure is, usually at least, due to the union not only of the inferior and superior post-central sulci, but also of the transverse post-central sulcus mentioned above. Ordinarily, this last is obliquely upward and forward in direction, gives a triangular aspect to the inferior part of the post-central gyre, and serves to separate it either shallowly or deeply from the supra-marginal gyre's insertion, and sometimes cuts deeply into the Sylvian at the upper posterior angle of the insula.

Separateness of inferior and superior post-central sulcus from each other and from the inter-parietal proper, other things equal, tends to make for inferiority.

In some points, the problem of the significance of the arrangements observed is too complex to be solved at present.

The statement of Cunningham* that in man "there appears to be a general tendency towards a union of the two originally distinct post-central elements" of the "intraparietal" sulcus, is well-grounded. But his additional statement that in man there is a general tendency to a "divorce" of the inferior post-central sulcus element from the "ramus horizontalis" is not so easy of acceptance. At all events the facts seem to limit the statement very straitly to a "tendency" only, and one which fails in the vast majority of cases. For, taking only his own numerical figures, this "divorce" was in 17·4 *per cent.*, only, of the adult hemispheres he examined; *i.e.*, in the elemental arrangements of the "sulcus intraparietalis" which make his varieties "I" and "III": these including *all* cases in which the inferior post-central sulcus and "ramus horizontalis" were not joined to each other; and there being no case of any divorce being limited to these two elements solely, according to him; for he tries to explain away the "very rare" variety "V" as not being really of that nature. Here it may be incidentally remarked that I do not think this variety "very rare" nor the examples of it to be always explainable away in the manner attempted. *E.g.*, in an inferior brain I found the lower post-central sulcus represented only by a few fragments; the superior post-central being confluent with the inter-parietal sulcus (in the strict sense) and the posterior gyrel of the latter superficial.

Furthermore, the union of the inferior post-central sulcus and "ramus horizontalis" does not always exist in the brain of apes of all kinds. Nevertheless it must be freely admitted that this union is far more extremely often found in the ape than in man.

But considerable differences exist between the statistics of observers on the arrangements of the post-central and inter-parietal sulci. Contrast those drawn by Sernow from brains of Russians with those found by Cunningham in brains of Irish adults:—

First type: an uninterrupted post-central sulcus, representing confluent superior and inferior elements; separate from inter-parietal sulcus :—Russians 22 p.c.; Irish 11 p.c.

* *Op. cit.*, p. 216.

Variant of this type by division of post-central into two separate elements :—Russians 9 p.c. ; Irish 6·8 p.c.

Second type : uninterrupted post-central united with inter-parietal :—Russians 35·5 p.c. ; Irish 60·8 p.c.

Variant of this type by division of post-central into two separate elements (of which the lower is united with the inter-parietal sulcus) :—Russians 8·5 p.c. ; Irish 19·1 p.c.

These statistics must be compared as modified by the fact that in no less than 25 per cent. of the Russian brain-hemispheres the post-central sulcus is excluded as being either absent or represented only by several small furrows. For due comparison, therefore, some percentage must be added to the above *Russian* numerals.

As regards the inter-parietal (in the restricted sense), it was stated to be a long strong wavy arch in 57 per cent. of these Russian hemispheres ; divided into two unequal parts in 29·5 per cent. ; imperfect, and presenting only the posterior section, in 12·5 per cent. ; absent in 1 per cent.

(To be continued.)

*Latah. A Mental Madady of the Malays.** By W. GILMORE ELLIS, M.D., M.R.C.S., Medical Superintendent, Government Asylum, Singapore.

The only papers dealing with latah, with which I am acquainted, are a brochure by Mr. H. O. O'Brien, of the Straits Settlements Civil Service, published some years ago in the *Asiatic Journal*, and a short notice by Dr. A. M. Browne, of Sydney, published in the *Provincial Medical Journal*, 1887 ; though the Miryachit of the Siberians and Lapps, the jumping disease of America, and the Bah-tschi of the Siamese, diseases allied to, if not identical with, that which forms the subject of this essay, have been all fully described. Quite recently, and since I had begun to put these notes together, Dr. Van Brero has written a paper on the subject ;† and Mr. F. A. Swettenham, the British Resident of Perak, has published a book called “*Malay Sketches*” in which there is a chapter on latah, dwelling

* Read at the General Meeting of the Medico-Psychological Association, November, 1895. For discussion see *Journal of Mental Science*, January, 1896, page 209.

† *Journal of Mental Science*, July, 1895, page 537.

principally on the humorous side of the question as it appears to bystanders. Mr. Swettenham likens latah to cases of hypnotism shown him in one of the Paris hospitals.

Under the name "Latah" the Malays describe a variety of peculiar nervous conditions of a transitory character which are most difficult to classify, for one rarely sees two persons suffering from latah in whom the symptoms are precisely similar. In all, the diseased condition is sudden in its onset, and due to many different causes that may be considered exciting—these being usually of a most trivial nature, such as an unexpected noise (auditory); some unlooked-for action on the part of a bystander (visual); a sudden touch; the mere mention of some word, usually the name of a wild animal, especially the dreaded tiger. The majority of cases become excited by any of the first three mentioned causes, but there are cases only excited through their sense of hearing, and others only through their sense of sight. I have not yet found a case in which smell or taste were causes. Latah is also frequently induced by teasing the unfortunate subject for the amusement of those around. The duration of the phenomena is variable and may last from a few moments to half an hour or more. Sufferers from the disease as seen amongst the Malays in the form to which they themselves give the name latah, may be divided into two classes, viz., those in whom involuntary and frequently unwilling mimicry is the predominant symptom, and those whose symptoms are paroxysmal outbursts of little more than momentary duration in which coprolalia is the prominent feature. Sufferers of the latter type will often aim a sudden blow at the person nearest them. That these two divisions are one and the same disease is in my opinion most unlikely. It will be seen that certain cases of the mimetic form are very like hypnotism, but generally consciousness is not lost and the mimicry is unwilling though found impossible to combat. The paroxysmal form on the other hand suggests the mental condition of "amok," but is of much shorter duration, nor can I discover that sufferers from latah are prone to amok, or that those who have run amok have been especially subject to latah. If running amok be due to masked epilepsy, as I suggested in a paper on amok published in this Journal in July, 1893, it is possible that certain cases of latah may be of the same relationship to amok as petit mal to epilepsy.

Further classification might be made, but it is my present object to describe the disease as seen in Malays rather than to attempt a scientific explanation of it.

Tuke's *Dictionary of Psychological Medicine* describes latah as a form of religious hysteria prevalent in Java in which consciousness is lost during a paroxysmal outburst of inarticulate sounds and involuntary movements. This description is misleading, for latah is prevalent amongst all the Malay races, is never in any way mixed up with religion, while hysteria as understood by us is practically unknown among them. Consciousness is certainly sometimes lost during a paroxysm, but in those cases I have seen it is not the rule.

Latah is manifested chiefly, but not solely, in persons of Malay race; I have seen a few Eurasians and Indians undoubtedly sufferers, and Mr. O'Brien mentions having seen latah exhibited in two Sikhs and a Nubian. Not a trace of the condition has ever been observed in any of the numerous members of the Chinese races resident in the Straits Settlements.

Cases of the Mimetic Form.—A marked case of this form was seen by Mr. O'Brien when travelling across the Malay Peninsula in 1875. A young Malay boatman was pointed out to him as being a sufferer from latah, yet nothing could be seen in the man's conduct or conversation which was not perfectly rational. Some twenty-four hours after making his acquaintance Mr. O'Brien and others were firing off some rockets for the amusement of the boatmen who had helped them up the river. One had been already fired and Mr. O'Brien was on the point of firing a second when the Malay pushed him violently aside, snatched the torch from his hand, fired the rocket, and fell down on his face making an unintelligible noise, to all appearance the expression of fear. Mr. O'Brien was startled, such rudeness being quite foreign to the Malay character, and having sought an explanation from the bystanders he was informed laconically "Latah, tuan" (latah, sir). Next morning this Malay was perfectly rational and respectful. Mr. O'Brien seeing him standing alone on the bank waved his hand to him in farewell as he and his party put off down stream; to Mr. O'Brien's surprise the Malay waved his frantically in return. Mr. O'Brien had begun to whistle an air, the Malay also began whistling; he was unable to give even an idea of the tune, but an up-country Malay whistling at all was before this

quite unheard of. The steersman to whom Mr. O'Brien turned for an explanation came out with the stereotyped formula "Dia baniak latah" (he is very latah).

Mr. O'Brien also described a case of latah the finale of which has become historical in these parts. A Malay cook on board a local steamer, the butt of the crew on account of his disease, was daily subjected to their clumsy wit. One day as this cook was dandling his child one of the crew came and stood before him with a billet of wood in his arms, which he began to toss up to the awning and catch again. The cook tossed his child up also, time for time. At last the sailor opened his hands wide apart and let the wood fall upon the deck. The cook immediately imitated him, missed the catch, and allowed the child to fall heavily upon the planks, from which it was picked up quite dead.

A third case described by Mr. O'Brien is somewhat parallel to the above, where a Malay ayah who saw her master tear up a letter and throw it out of a window promptly threw a basket of clean clothes that she was carrying out of the opposite window, with the simple apology that she could not help doing so.

There is a Malay syce in Sungei Ujong who, with no knowledge of English and no voice to speak of, will sing "Sweet Belle Mahone" from beginning to end in English and in tune, following his master, or any other person who starts his latah, bar by bar. Ordinarily he never sings.

I have been told of an old Malay lady of Singapore who will imitate, or attempt to imitate, any sudden noise that she may hear, but otherwise she is quite free from latah.

During a trip in 1890 at Kedah, an Independent Malay State, bordering the southern limits of Siam on the west, an old Malay woman was brought to me, said to be a sufferer from latah to a marked extent. She seemed to be a pleasant old lady, and I could discover nothing out of the ordinary in her behaviour. When she was quite off her guard one of her accompanying friends suddenly prodded her in the ribs with a finger and commenced to throw off some clothes. The old lady immediately followed suit, and had she not been stopped would soon have entirely divested herself of her garments. Then one of our party, somewhat clever at dancing a *pas seul*, started a kind of can-can. It was most ludicrous to see the poor old woman trying to emulate his activity. She was quite conscious of what she was doing and was exceedingly angry, and said so, at being made to make such an

exhibition of herself before strangers. She was somewhat sullen when leaving, probably through temper. Her friends told me that she would not be quite herself until she had had a sleep.

A case quoted by Mr. O'Brien is almost identical with that I have just described. He writes: "A Malay woman of respectable position and exceedingly respectable age was introduced to me some time ago as a strong latah subject. I talked to her for at least ten minutes without perceiving anything abnormal in her conduct or conversation. Suddenly her introducer threw off his coat. To my horror my venerable guest sprang to her feet and tore off her kabayah (gown). My entreaties came too late to prevent her continuing the same course with the rest of the garments, and in thirty seconds from her seizure the paroxysm seemed to be over. What struck me most in this unsavoury performance was the woman's wild rage against the instigator of this outrage. She kept on calling him an abandoned pig, and imploring me to kill him all the time she was reducing herself to a state of nudity."

Cases of the Paroxysmal Form.—The following case is typical of this variety in which copralalia is the prominent feature. I have seen many such cases. A male Eurasian, 43 years of age, having Portuguese father and Malay mother, both of whom are alive and healthy, married, with several children, all healthy. First noticed that he suffered from latah when about the age of 22. He starts at any sudden noise, and cannot prevent himself from shrieking out "Puki" (a term for the female generative organs) wherever he is. If suddenly touched he usually shouts out "Puki," and throws anything that may be in his hands at the nearest person. I tried the experiment and had his hat dashed in my face, for which action he immediately apologised. Once when in church (he is a Roman Catholic) someone touched him from behind on the shoulder, he at once shouted out and threw his prayer book at a lady sitting in the pew in front of him. He knows perfectly well what he is doing, is not insane in any way; in fact is above the average of his class in mental capabilities, yet he cannot resist his ridiculous impulse when startled. His affection has always prevented him going out much or mixing with strangers.

A few years ago there was a Government clerk, an Eurasian, about 30 years of age, who, if suddenly touched (shouting would not do in this case), uttered some obscene remark

and immediately rushed to and embraced a tree or post, attempting sexual intercourse. After the paroxysm he was always furiously angry with anyone who had been the cause of his outbreak.

One of my best female attendants, a half-bred Malay and Tamil, 48 years of age, is slightly afflicted with latak. Whenever I have occasion to admonish her she stands trembling for a few seconds, micturates and passes flatus, and then as if startled at the sound she loudly utters a filthy word, and promptly apologises for her conduct.

Another class of cases that I should place in the division of paroxysmal latak consists of those in whom the mere mention of a certain word in their hearing is sufficient to bring out the abnormal quantity. It is always the name of some noxious wild animal, such as "buaya" (alligator), "hariman" (tiger), or "ular" (snake). A man whom I know will shout out some obscene word and run a hundred yards away before coming to himself if the word "hariman" is suddenly pronounced in his hearing, yet he will use the word himself, trembling somewhat, perhaps, and beseech one not to mention it.

Mr. O'Brien mentions that he once met a "pawang" (medicine man) who exhibited extreme distress at hearing the word "tiger," although he was one of the few men who dared to pass nights in the jungle alone.

The same author describes another experience of his in which the word "alligator" was the exciting cause of the latak. Having shot an alligator on the bank of a river, a Malay who suffered from latak was the first to approach the reptile. Against Mr. O'Brien's earnest entreaties he proceeded to pull the creature about, and finally forced its mouth open with a piece of wood. His fellow boatmen stood at a respectful distance until certain of the reptile's death. An hour afterwards when poling up the river one of the crew called out to this man "Alligator." He at once dropped his pole, gave vent to a most disgusting exclamation, and jumped into the river, an act which showed, as Mr. O'Brien points out, that his morbid terror was quite unconnected with what might be supposed to be its exciting cause.

A few days ago a Malay woman named Mena was brought to me; she was 45 years of age, with strong mimesis, also given to coprolalia. She is a widow, her husband having died some years ago from elephantiasis of the scrotum. She

has four children, one a son in the police service ; none of these have shown any symptoms of latah. She conversed with me quite rationally until I suddenly gave a scream ; at once she screamed too. I danced, she danced, imitating me as nearly as possible through a number of steps, and several times when making a short remark to a friend in English she imitated the English words fairly well, although she cannot speak a word of the language. I then spoke to her quite quietly, but found all her answers irrelevant ; for instance, on being asked what a cigarette was, she replied, "Cows eat stones ;" then a shake of the head as if she knew she was talking foolishly. Another sudden shout from me brought out from her the favourite exclamation "puki" and then she hid her head as if ashamed. I took a log of wood and held it out to her saying "Snake ;" she immediately ran crying to a corner of the room calling out "Don't." When told it was not a snake she took hold of it very cautiously and at once dropped it. I tried to hypnotise her, and to make her sleep by suggestion, but failed. A quarter of an hour after the performance she was quite rational again, having but an indistinct recollection of what had taken place. Her mother tells me that whilst she herself only developed latah about middle age, her daughter has been subject to it since the age of twelve years.

Other persons suffering from latah, as latah is understood by the Malays themselves, have symptoms pointing to a relationship between their affection and hypnotism, supposing the two to be not identical. In some it is necessary to first startle them by a sudden shout or prod, but on the other hand the majority, without any provocation, will obey to their utmost any suggestion made them. Their recollection as to what they do when in this condition is vague, and a few have apparently no after knowledge whatever of what they have been doing. I have seen numerous cases of this variety, but none so characteristic or so amusing as one described by Mr. Swettenham in *Malay Sketches*. Mr. Swettenham had two orderlies named Kassim, Malays, both afflicted with latah, whom he called Kassim Major and Kassim Minor. He had been ordered to Selangore, a neighbouring native State, and amongst other things took with him a roll of Calcutta matting. This roll of matting, which he did not use, stood about four feet high and was $2\frac{1}{2}$ feet in diameter. And now, to use Mr. Swettenham's own words : "One night some Malays from the village had come in and

my people were trying to amuse them and forget their own miseries by singing and dancing round the fire. Under such circumstances Malays have a happy knack of making the best of things, they laugh easily and often, and, as I have said elsewhere, they have a strong sense of humour if not always of a very refined description. Someone had introduced one of the Kassims as an 'orang latah,' for the benefit of the strangers, and one of the men was inspired to fetch the matting, and solemnly presenting it to Kassim the younger, said, 'Kassim, here is your wife.' Even now I do not forget the smile of beatitude and satisfaction with which Kassim Minor regarded that undesirable and figureless bundle. Breathing the words in a low voice, almost sighing to himself, 'Kassim, here is your wife,' he embraced the matting with great fervour, constantly repeating, 'My wife! my wife!' Someone said 'Kiss her,' and he kissed her—repeatedly kissed her. Then by another inspiration (I do not say from whence), someone brought up the other Kassim, and introducing him to the other side of the roll of matting, said, also very quietly, 'Kassim this is your wife,' and Kassim the elder accepted the providential appearance of his greatly desired spouse, and embraced her with not less fervour than his namesake and rival. It was evident that neither intended to give up the lady to the other, and as each tried to monopolise her charms a struggle began between them to obtain complete possession, during which the audience, almost frantic with delight, urged the actors in this drama to manifest their affection to the lady of their choice. In the midst of this clamour the Kassims and their joint spouse fell down, and as they nearly rolled into the fire and seemed disinclined even then to abandon the lady, she was taken away and put back in her corner with the chairs and snakes. It is a detail, which I only add because some readers hunger for details, that neither of the Kassims possessed a wife."

Another case of Mr. Swettenham's is that of a Malay who, having climbed a cocoanut tree, remained there for hours because someone had tied a piece of rattan round the stem and told him it was a snake. This is an old story, and I have heard of its being frequently done.

I am not now desirous of experimenting upon those suffering from latah, and agree with Mr. O'Brien that the person who at one's bidding stands on his head, picks up a red-hot piece of iron, or strikes a bystander twice his own size, is

frequently conscious of the mental abasement which he is exhibiting and resents his degradation most intensely.

Latah is nearly invariably hereditary, attacking a large proportion of the members of a family. The heart's action is accelerated during an attack. The reflexes remain normal. While somewhat rare amongst young women it is fairly common amongst those of middle or old age, and in them also it is usually more pronounced. It affects the female sex more frequently than the male. When the inception is early it is commonly first noticed about the age of 12 years, the unhappy victim being greatly teased by other children. On more than one occasion Malays have told me that the affliction was due to dreams, but as they are great believers in dreams and ghosts, and their power for evil, the statement goes for nothing. In the younger female sufferers there is frequently found an entire absence of sexual self-restraint, never a strong point with Malay women, but, to quote from Mr. O'Brien, "it is very startling to find that the disease, where present in females of advanced age, often manifests itself, when set in action in the same direction, in a way which seems entirely to contradict the accepted laws of our bodily constitution. That a word, a look, or a gesture, can in a moment lead a woman of 75 to conduct herself like a hetaira of 20 is a phenomenon so opposed to natural laws that one seeks in vain for its satisfactory explanation."*

Natives have told me of cases in which those afflicted with latah have to a certain extent mastered their disease, but of this I am very doubtful.

For the last 300 to 400 years the Malays have been Mahomedans, and I have never yet seen or heard of a case, as I have stated early in this paper, in which religion was mixed up with the symptoms of latah in any way.

As far as I can gather, latah is as prevalent now as it was years ago, prior to the Straits Settlements and Native States being British or under British protection, and prior to the country being dotted with schools. Those afflicted are not degenerate either as regards physique or mental capabilities. As Malays go, many whom I have examined have been most able. Cases of latah are never sent to Lunatic Asylums, and the Malays themselves draw a very distinct line between latah and insanity.

* Dr. van Brero states that young women suffer more than the older ones, but this has not been my experience.

Some Appearances Indicating Phagocytosis observed in the Brains of the Insane: Essay for which was awarded the Bronze Medal of the Medico-Psychological Association, 1896. By JOHN TURNER, M.B., Senior Assistant Medical Officer, Essex County Asylum.

Dr. Bevan Lewis ascribes to the Deiters cells of the brain a phagocyte function; as the scavengers of the brain they absorb and remove effete material, and also according to his view attach themselves to degenerated nerve-cells, whereby these structures are gradually through their agency absorbed and removed.

The following observations appear to indicate that other bodies besides the Deiters cells take an active part in attacking and removing the nerve-cells in the cerebrum.

The phenomenon about to be described is so obvious and so commonly met with in the brain of the insane that it would be a matter of great surprise if it had hitherto been altogether overlooked. Still, beyond the observations quoted below, I am unable to find any reference to the subject, either in standard works on insanity or in journals treating of matters relating to this disorder, and it appears of such an important nature as to warrant a detailed description to bring it more prominently before notice even if it has been previously recognised. Dr. Palmer in his "Illustrations of Normal and Defective Development of the Multipolar Cells of the Cerebral Cortex," *Journal Mental Science*, Vol. xxxiii., figures the process I am referring to (see especially Figs. 15 and 16), but merely refers to them in the text as illustrating degenerated and wasted multipolar cells. Drs. Batty Tuke and Woodhead in their article "Pathology," *Dict. Psycho. Med.*, p. 904, observe that they have obtained evidence of leucocytes taking on a phagocyte action in a case of insanity of nine months' duration with obscure motor symptoms. "The large cells of the motor area were found undergoing degeneration, and had evidently been attacked by leucocytes." . . . "The substance of the cells was in many cases invaded by one, two, or three such bodies, and were also surrounded by large numbers of the small nuclei of neuroglia." In this case Deiters cells were not found. This would appear to be a similar process to what I am about to describe, although, as no figures are given, it is difficult to make certain whether it is altogether the same. At any rate, its authors appear to regard it as an uncommon

occurrence, whereas, as will be shown, the process I describe is commonly seen in many varieties of insanity, and is especially abundant in senile brains.

Lying free within the peri-cellular spaces are cells which stain (or rather outline) crimson with acid fuchsin, and contain granules also crimson. They are round, oval, or shrivelled, and measure between 4 and 9 μ . Sometimes only one is seen in a space, at others two, three, or four, and in almost every case the cytoplasm of the nerve-cell nearest to the invading cell has a portion deficient. The nerve-cell appears as though a piece had been bitten out, leaving a clean-cut semi-lunar gap. The effect is striking. We can, in favourable preparations, follow as it were all stages of the process from those nerve-cells which have only a small piece of cytoplasm eaten away (Figs. 1, 4, 3, 10) to those which consist of little more than a nucleus surrounded by a mere remnant of cytoplasm, utterly devoid of all processes (Figs. 6, 9). Even in these extreme cases the outline of the cytoplasm still corresponds in its indentations to the position of the invading cells. Sometimes we see the apex process with an invading cell lying close, and here the process appears as though being eaten through (Fig. 5). I have never seen the nucleus implicated. In the most advanced instances, where but little else is left of the nerve-cell it is apparently still intact, though often shrunken, and perhaps with no nucleolus visible.

My notes concerning this appearance extend back for five years, but until recently the condition was figured without, as I now believe, a due appreciation of the importance attaching to it. The notes refer to many varieties of insanity, viz.:—General paralysis, alcoholic insanity, and various forms of melancholia and mania. I do not infer that these are the forms of insanity in which this condition is mostly seen, or to which it may be peculiar. I mention them simply as being the cases where, so far, I have met with it to a marked extent; probably a more extended examination of morbid brains will show that the appearance is common to other forms of insanity.

The ages of my cases vary between 28 and 80, and it has been met with in those where the onset of the mental disorder was of quite recent occurrence. The cases from which the figures are taken were as follows:—

No. 1.—A female, *æt.* 52 (Figs. 1 to 4 inclusive). Although the attack of insanity was stated to be of four or



3.



6.

7.



8.



9.



10.



11.



12.

To illustrate Dr John Turner's Prize Essay.

five years' duration, her symptoms were acute. She was in a state of active melancholia, constantly restless, extremely agitated, and profoundly miserable. After a short residence she died of cardiac failure and exhaustion of melancholia. The figures, as in all the other cases, are taken from preparations of the frontal lobe.

No. 2.—A female, æt. 80 (Figs. 5 to 8 inclusive). Her insanity was of over five years' duration, and her prevailing symptom that of melancholia, with restlessness. After a residence here of four or five months she died of bronchitis and senile decay. The nerve-cell destruction in her case was most marked and extensive, and seen both in section from the frontal and occipital lobes, but more in the former; here there was scarcely a single cell without one or more invading cells lying in its peri-cellular space. There were very slight evidences of proliferation of the Deiters cells; a few were noticed in the first layer, but none elsewhere. Fig. 8 shows a capillary in the neighbourhood of two nerve-cells, outside of which are several cells in all respects similar to those in the peri-cellular spaces. All the capillaries exhibited cells (wandering leucocytes) in their peri-vascular spaces, but this condition was not nearly so marked as in the next case.

No. 3.—A female, æt. 28 (Figs. 9 and 10). She was admitted here acutely melancholic, refusing food. She was kept in bed, where she lay moaning and groaning, was restless at night, and struggled when one attempted to examine her. After remaining in this low and exhausted state for three weeks she developed bronchitis and died. Her insanity was of recent onset, dating only five days prior to admission. She had had a slight attack of melancholia five years previously. Sections taken from both frontal and occipital regions showed a great quantity of invading cells, most of which were small, and had a denser appearance than the cells in the two prior cases; but though this was the rule, yet some of them were large, measuring $8\mu \times 6\mu$, and with only a few granules within (Fig. 10).

No. 4.—A female, æt. 33 (Figs. 11 and 12). This woman was a general paralytic. The disease was in a fairly advanced stage. Sections from her frontal and parietal lobes exhibited extreme proliferation and growth of Deiters cells, and also a very considerable invasion of the peri-cellular spaces by cells which were in almost all cases associated, as above described, with partially destroyed nerve-cells.

What are these cells? I think there can be very little doubt but that they are wandering leucocytes. Their size, as has been mentioned, varies between 4μ and 9μ . In the great majority of cases they are 6μ . Generally round and plump, but sometimes shrivelled, or with a kidney-shaped appearance. They outline vivid crimson with acid fuchsin, and contain granules which also stain crimson; sometimes their contents appear dense, at others only a few scattered granules are seen within. With logwood they stain deeply; with Rosin's stain, the methyl green picks them out. The capillaries in the neighbourhood of the affected nerve-cells (and I am now referring to cases uncomplicated by increase of Deiters cells or proliferation of cells in the walls of the blood-vessels as seen, *e.g.*, in general paralysis) always show a fair number of exactly similar looking bodies just outside their walls in the pericellular space and also within (see Fig. 8.) Likewise within the big vessels of the pia we see amongst the blood discs a few bodies evidently leucocytes, which have an identical appearance to the cells found in the pericellular spaces. These facts strongly suggest that the invading-cells are wandering leucocytes, more especially as we know that in normal brains they are met with in the pericellular space. Obersteiner (*The Anatomy of the Central Nervous Organs*, translated by Hill, p. 138) figures a nerve-cell and capillary with surrounding lymph space, in the pericellular portion of which are two leucocytes occupying a position at the base of the nerve-cell similar to what I have described.

Whatever explanation may be hazarded of the appearances above described, there can be no doubt that a very strong impression is left on the mind, when examining specimens which exhibit this condition, that the nerve-cells are being destroyed by the neighbouring bodies seen free in the pericellular space. Practically in all cases where they are seen a portion of the cytoplasm of the nerve-cell in their vicinity is deficient. This piece, as mentioned before, and as the figures show, has a clean-cut, scooped-out appearance, and if two or more cells are present then two or more portions of the cytoplasm in their neighbourhood are scooped out. It seems to me that we must suppose that either the invading cell exercises a solvent action on the cytoplasm of the nerve-cell in its vicinity, whereby such portion is carried away by the lymph stream, or else they themselves absorb and, as it were, feed on the nerve-cells. That is, they exhibit a phagocyte function. There are certain facts which render this last

suggestion the more probable. We know that leucocytes are capable of exercising such function, but the question arises why they should attack nerve-cells, in the vicinity of which they normally come without exercising such action. Is it because the nerve-cells are degenerated, and therefore fit objects for them to destroy? Or that for some reason or another they are endued with a depraved appetite, so to speak, and attack structures which they normally leave untouched? Or that owing to blocking up of the lymph channels they get shut into the peri-cellular spaces and so feed on the nervous elements in default of other sustenance? At present one is hardly in a position to give any decided opinion as to which of these explanations, if any, is the true one, but from other appearances noted so far in the specimens where the condition is met with, it would seem as not at all unlikely that the latter, viz., that the leucocytes are hemmed in and cannot escape, is in some cases a feasible explanation why they attack the nerve-cells. In such preparations the peri-vascular spaces are seen heavily laden with pigment, which might easily by its presence block the lymph channels, especially at the narrow parts where the peri-cellular space blends with the peri-vascular. Such a condition was extremely well marked in the case of No. 3, and was seen both in fresh preparations and in hardened specimens; some of the finer vessels were completely mapped out in pigment granules, clumps of which were deposited at each branching of the vessel. The fact that these invading cells are seen in recent cases of insanity would appear to indicate that they do not necessarily only attack degenerated nerve cells.

From the nature of the appearances described it can readily be appreciated that they are only to be demonstrated in sections so mounted that all their parts are preserved *in situ*; otherwise the little free cell would be washed away. Hardening brain in Muller's fluid, etc., produces such shrinking and distortion of the elements as to obscure the appearance. At any rate, I have not been able to perceive it in brains so prepared, although it was evident in other parts of the same organ differently treated. My procedure was as follows:—Very small (thin) pieces of brain from cadavers not more than 10 hours dead, were placed in Fol's solution and left for 24 hours at a temperature of 35 deg. to 40 deg. C., or for 48 hours at the ordinary temperature; then washed and placed into alcohol 80 %_v, finally into ab-

soluble alcohol, where they remained 4-5 days. Soaked in chloroform for 6 hours and then placed in paraffin of a melting point of 50 deg. C. and left at that temperature for 16 hours. Sections cut and fixed to the slide by capillary attraction (Altmann-Gaule method). They were stained in a concentrated solution of acid fuchsin, to which was added a little aniline blue. After staining a few minutes they were rinsed in water and treated to 0.25 per cent. alkaline alcohol. This was rapidly poured off. Then again they were dipped into water and dehydrated in absolute alcohol and cleared in clove oil or xylol. Photo-micrographs are submitted herewith.*

EXPLANATION OF THE FIGURES.

- Fig. 1. Invading cell $5\mu \times 4\mu$. Nucleus of nerve-cell $10\mu \times 4\mu$. No nucleolus seen. Apex and two basal processes.
- Fig. 2. Nerve-cell extensively destroyed. No processes. Nucleus of nerve-cell $10\mu \times 8\mu$. Nucleolus $2\mu \times 2\mu$. Invading cell $6\mu \times 6\mu$.
- Fig. 3. Apical process faintly seen running between three other cell spaces. Nucleus of nerve-cell $12\mu \times 8\mu$. No nucleolus. Invading cell $6\mu \times 6\mu$.
- Fig. 4. Nerve-cell with no basal processes. Nucleus $12\mu \times 12\mu$. Nucleolus $3\mu \times 3\mu$. Invading cell $6\mu \times 6\mu$.
- Fig. 5. Shows invading cells attacking apical process. Three basal processes faintly seen. Cytoplasm of nerve-cell full of yellow pigment. Invading cells $7\mu \times 6\mu$ and $7\mu \times 5\mu$, with scanty contents.
- Fig. 6. Two nerve-cells nearly entirely destroyed, except their nuclei.
- Fig. 7. Nerve-cell with short apical and three blunted faint basal processes. Invading cell has bitten deeply into cytoplasm.
- Fig. 8. Shows a capillary with no peri-vascular space visible. The capillary is full of blood discs. Several cells similar to the invading cells are seen within, and just without its walls. Two neighbouring nerve-cells shown with invading cells.
- Figs. 9 and 10. Two nerve-cells attacked. In 9 only the body of cell is left. No processes. In 10 the invading nucleus is large, $8\mu \times 6\mu$, and with scanty contents.
- Figs. 11 and 12. Two nerve-cells from general paralytic brain. In 12 no nucleus is seen, and one of the invading cells is very large, $9\mu \times 8\mu$.

* These have been placed in the Library of the Medico-Psychological Association.—[ED.]

*The London County Council Asylum at Claybury, and a Sketch of its first Working Year.** By ROBERT JONES, M.D.
 Lond., B.S., F.R.C.S. Eng., Medical Superintendent.

This is the first asylum of the London County Council and the fifth for London, and it stands on a hill 230 feet above ordnance datum in a freehold estate of 269 acres, one-and-a-half miles from Woodford Station, on the Great Eastern Railway. It is about nine miles from the Royal Exchange. The ground was bought by the Middlesex Justices for £39,415. They first visited the spot on 27th February, 1886, almost seven years before patients were received. About 70 acres of the ground is woodland, and the soil is clay with beds of gravel interspersed. The Justices proceeded to fence in the estate, build two lodges, lay down a granite tramway from these to the building site, and level the top of the hill, a plateau of about a dozen acres in extent, for all the central and some of the outside blocks, and also to complete the foundations, when the Local Government Act of 1888 transferred the care of lunatics and the management of County Asylums to the County Councils.

On the 1st July, 1889, the Sub-Committee which the Asylums Committee of the London County Council appointed for the purpose, met the Justices at Claybury, and re-appointed Mr. Hine as architect. To him I am indebted for plans and views of the asylum buildings; also for much of the information upon which I base this paper. Up to this time the Justices had expended £83,297 and the Council £9,307. The London County Council decided upon open competition for the superstructure. Thirteen contractors competed, and Mr. E. Gabutt, of Liverpool, was approved, his tender being £337,945. He had the Sub-Committee's sanction to lay down a line of rails over the land to connect the works with the Great Eastern Railway main line.

The first Chairman of the Asylum under the Council was Mr P. M. Martineau, a Surrey magistrate, whose experience in poor-law work and the management of institutions was described before a Royal Commission as unique. The asylum had the advantage of his continued direction until after the first year of opening.

On the 12th June, 1890, a year after taking it over, Lord Rosebery, the then Chairman of the Council, laid a suitably

* Read at the General Meeting of the Medico-Psychological Association, London May, 1896.

inscribed stone over the principal entrance; and during 1891, whilst the structure was in progress, the Asylums Committee appointed Dr. Claye Shaw to confer with the architect, and Mr. Gunyon, the Council's electrical engineer (to whom I am under much obligation for assistance), and to consider the advisability of electric lighting. The estimated cost was £17,500, the real cost £23,000, £5,500 more having been sanctioned to meet further contingencies. The report of the Chairman stated that "gas would probably cost less, but the superior advantage of brilliancy and softness of light, greater cleanliness, improvement in sanitation, saving in cost of decorating walls and ceilings, were sufficient to decide in its favour." Subsequent experience has fully borne out the boon and comfort to have thus decided.

During the year 1891 it was decided to repair and to add to the mansion on the estate, and Mr. Martineau states "so that it may become 'an annexe' for the accommodation of paying male patients—a small private asylum under public control—and it is hoped that the success of this experiment may encourage the Council to provide further for a class of patients above the pauper class, but who can ill afford to bear the cost of a private asylum, and who may find comparative quiet and comfort; perhaps even a touch of 'home' in such an institution as the Claybury mansion-house." This old mansion was repaired and restored at a cost of £800, and a new wing was added to provide suitable accommodation for acute cases at a cost of £13,130. Fifty male patients are accommodated here at 30s. a week if belonging to London, 40s. if otherwise.

In April, 1892, the date named for completion in the contract (still a year from the reception of patients), Mr. Martineau stated that the Committee were keenly alive to the imminent need the county had for the accommodation the asylum could give, and that they were doing their utmost to push the work on. The buildings, however, were by this date roofed in, the blocks plastered, the floors laid, and the joiners' work fixed in the main. There still remained some of the engineer's work for heating the building, although the seven boilers were already seated.

In December, 1892, the Medical Superintendent was appointed, and the steward took residence. In April, 1893, the Medical Superintendent came into residence, and in May the first patients were received. The road to the principal entrance, however, was not completed, and there was

no electric light or gas. There was, hitherto, no pathological laboratory, mortuary, nor farm buildings, but the general arrangement of the asylum was as follows:—Designed in 1887 to accommodate 2,000 patients—800 males and 1,200 females. (Since then rooms designed for other purposes have been given to patients, so that the present accommodation is calculated at 2,500—1,450 females and 1,050 males.)

These are all accommodated in separate blocks, generally only two storeys high, and connected by one-storey corridors, which communicate with the administrative buildings, the recreation hall, and chapel. The administrative buildings are so arranged as to give access from each in the most convenient way without unnecessary length of corridors. The corridors connecting blocks are 15ft. wide, are divided by screens, cross-ventilated and heated, so that in wet weather they can be used by patients for exercising. One section of the corridor on each side (male and female) is used as a visiting-room three times a week, the number of visitors on Sundays varying from 700 to 1,000.

The asylum throughout is constructed in a very substantial manner, being in red brickwork with plain brick facings, very little stonework or expensive detail being introduced, except in a few of the principal rooms and entrance block, which is the official centre, the materials used being specially selected of the most durable description, and with a view of saving expense in painting and renewals, the corridors being lined to dado height with glazed brickwork. The bakehouse, all the sculleries, lavatories, bath-rooms, larders, washhouses, as well as the annexes of every ward and dormitory, and the slop and water closets, are all of white glazed brickwork.

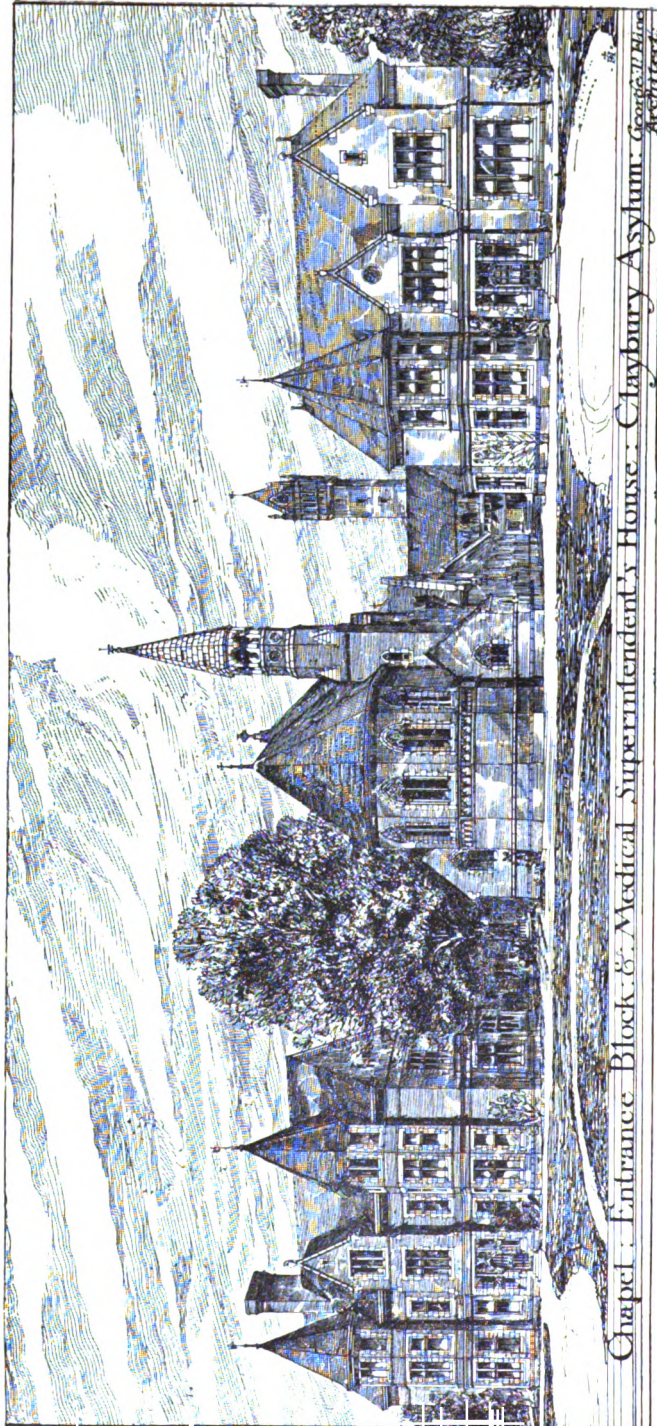
The patients' wards comprise on each side three two-storey blocks for sick and infirm and recent cases in twelve distinct wards, each being self-contained on a floor. These six blocks accommodate 650 patients (300 males and 350 females). Beyond these are two three-storey blocks for acute cases, one on the male side of six wards for 180 patients, the other on the female side of nine wards for 295 patients. A great feature of Claybury is that the acute wards (nine on the female side and six on the male side) are arranged each for a comparatively small number of patients, the total for each ward being 24 or 30, according to its size, each of these wards being again subdivided into three or

four separate rooms. The increased staff necessary to manage these wards is thus very evident, but the advantage in treatment is also very evident, and experience strongly commends this plan for other asylums. Our acute wards, as a result of this, are often quieter and easier to manage than the convalescent, but the extra staff needed tells heavily against the maintenance account.

Near the centre, and fronting two large airing-courts, are two blocks of three wards each for the epileptics, 170 males and 190 females. The dormitories for these are on the first floor, and form one continuous suite. Behind these wards are three-storey blocks, intended for quiet working and chronic cases, the day-rooms being generally on the ground floor and the dormitories above. On the male side these accommodate 350 patients, and 460 on the female side, whilst a block for 150 female patients employed in washing is placed near the laundry. There are 36 padded rooms, all of india-rubber panels, and of these 20 are fully padded, the rest being "half-padded." On the male side are workshops for tailors, shoemakers, upholsterers, carpenters, plumbers, and smiths, and on the female side a large and well-lighted work-room for 100 patients. Adjoining the cross corridors, and near to all the general wards, are bath-rooms with dressing-rooms. On the male side there are 24 and on the female 30 baths.

The whole administrative departments lie between two service corridors, 12ft. wide, running north and south, which give separate access from male and female sides to the laundry buildings, stores, kitchens and offices, and recreation hall, the serving-rooms in the stores, kitchen, and laundry being at the two opposite ends of these buildings, so that the nurses and attendants need not come in contact. Flanking these buildings are two blocks for attendants and nurses, with day, mess, and club-rooms on the ground floor, and bedrooms over, while a second block for nurses, with a separate wing for night nurses, is situated on the north side of the asylum.

The chapel, seating 800 patients, occupies a central position south of the main southern corridor, and on its western side is the entrance or official block, with committee-rooms and offices for the Superintendent and staff on the ground floor, and sitting and bedrooms for the male assistant medical officers above, whilst at the north-east corner of the asylum is a complete house for two lady



doctors. On the eastern side of the chapel is the Medical Superintendent's house, connected with the asylum by a private covered corridor.

Near the stores approach to the asylum is a detached house for the steward.

An infectious hospital for 20 patients occupies a site at least 100 yards to the north of the asylum, and a small one for two or three patients is always kept unoccupied and in readiness against the outbreak of any infectious disease.

The mansion for private patients, the workshops, the chapel, and the recreation hall are warmed by what is known as the "Plenum system," the remainder of the asylum being heated on a modification of this, all the heating elements and steam pipes being in the basement storey, out of patients' reach. Fresh air is admitted into underground trunks, which communicate by vertical flues in the walls with all the rooms required to be warmed. The air when heated ascends by its own levity and disperses in the room before being drawn off in the extraction flues, which are carried up into trunks in the roof space and communicate with extraction shafts and cowls, at the base of which are coils of steam pipes to be used as an extracting power in the summer when no warm air is being passed into the building. The heating power is steam, generated in one centre, where seven Galloway boilers provide steam for all heating, hot water, laundry, and cooking purposes throughout the asylum.

Water is laid on from the East London Waterworks Company's service, the buildings being fed from a number of tanks in the roofs, which provide a reserve of about 108,000 gallons.

There is also a system of water mains, charged at 50lbs. pressure, with hydrants and hose piping both inside and outside the buildings, for use in case of fire. The pressure in the main can be increased by setting the engines to work the pumps to about 65lbs. per square inch, and an additional pressure of 48lbs. can be obtained from the high service tank capable of holding 27,000 gallons. The valve of this is always released automatically when a fire alarm is given. This year in their official report the Commissioners in Lunacy stated that never in their experience have they noted so much pressure of water as at Claybury. The soft water is collected by a carefully-laid system of pipes, and conducted into a large tank near the laundry buildings

holding 300,000 gallons, and supplying the boilers, also at one time the laundry wash-tubs.

The entire ceilings of top floors of patients' blocks are of fire-proof construction, and all wards are provided with two exits.

There is a service of gas-piping in the building for cooking purposes, and gas is laid on to every ward kitchen, and gas stoves are supplied for summer use.

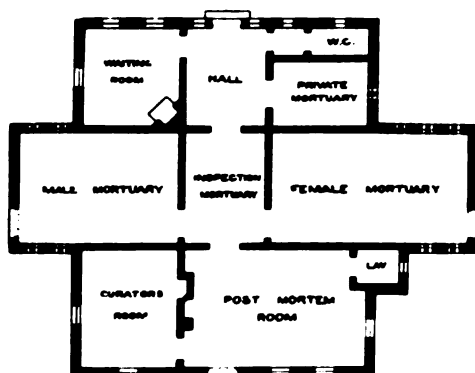
The roads and some of the outside buildings are gas-lighted, but the asylum is electric-lighted throughout at a cost of under twopence per unit. For this purpose three high-pressure boilers were laid by Paxman. They work four engines and with the accumulators supply over 4,000 incandescent and two arc lamps (I hope in another paper to give a full account of the electric lighting).

The airing courts are enclosed with unclimbable iron fencing and are planted. The paths are all asphalted. Seats for patients are found in kiosks and on ordinary garden seats made of teak.

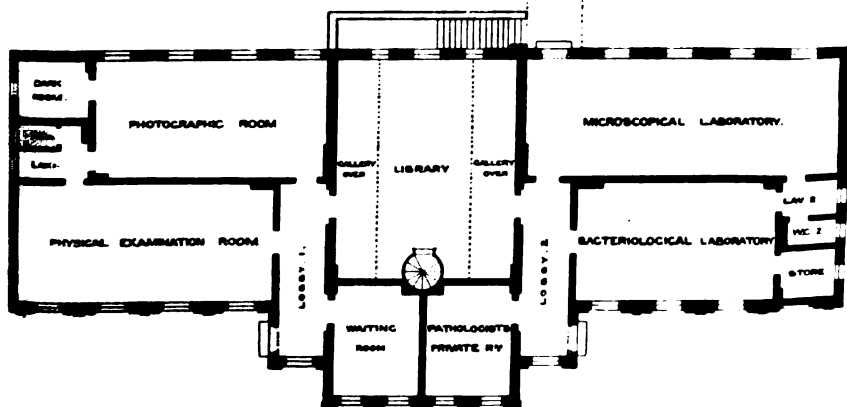
The drainage of the asylum has been very carefully considered, pipes with patent joints being used throughout, and in the few cases where it has been necessary to cross under corridors or buildings, iron pipes have been used. All the lavatories, baths, urinals, &c., empty on to disconnecting traps, the seats of all closets are fixed, and a handle at the end of a chain, enclosed in piping, can be pulled to open a syphon flushing tank of two gallons. The whole drainage system is well ventilated, and furnished at the head of each section with automatic flushing chambers which discharge from 200 to 500 gallons, and of these there are 15, including two at Claybury Hall. These are set in action once a week and are superintended by a workman whose special duty it is to clean the drains, gulleys, w.c.'s and urinals. There are manholes and air shafts and the main drain is carried to a settling tank near the farm for distribution on the land, with an alternative drain connected with the public sewer. The sewage from Claybury Hall has recently been discharged over beds of coke-breeze after the new method of purifying by Dibdin, and the effluent, which is perfectly sweet and clear, is discharged outside the estate. The mortuary and pathological laboratory have separate sewers.

The mortuary consists of an examination and specimen room, two rooms for the dead, one for each sex, and a "cold room" kept below freezing point for pathological purposes. There is also a waiting-room for friends.

PATHOLOGICAL BUILDING AND MORTUARY. CLAYBURY ASYLUM.



COVERED WAY.



GROUND PLAN.

SCALE OF FEET

The pathological department has a bacteriological, chemical, physical and photographic room, with a central library and museum. It was built and fitted up at a cost of £4,000, and it is superintended by Dr. Mott, F.R.S., Pathologist to the London Asylums.

The mortuary and farm buildings were built by the works department of the London County Council and erected at a cost of over £14,200. The latter accommodates about 80 cows and 400 pigs, and is provided with the necessary store rooms and appliances for chaff cutting, cake and corn grinding, worked by a gas engine. There is stabling for six or more horses, and there are outbuildings for young stock, &c.

The asylum alone covers an area of over 20 acres, there are 12 acres of slating, 13 acres of flooring, 2,600 doors, 4,700 windows, 11 miles of sewerage and rain-water pipes, and 22 miles of steam pipes, exclusive of hot and cold water piping; 27,000,000 bricks were used in its construction, and to go round an ordinary inspection involves a walk of about $10\frac{1}{2}$ miles.

The asylum is assessed at a gross value of £22,000 and at a rateable value of £17,000.

It is insured at £189,000.

The keys of the asylum reflect great credit upon the architect, whose ingenious and excellent arrangement of suites has worked well in practice and has the advantage that the officers, attendants, and nurses need as a rule to carry only one key. There is one G.M. (grand master) that passes all locks even when double-locked; next to this comes the A.M.O., which takes the lower grade; then the F.A. (female attendant) key, double-locked by the F.M. (female master), the same with the M.A. (male attendant), which is covered by the M.M. (male master). Then there are suites for the engineers (E.) covered by the master (M.E.) key, and the stewards (S.) covered by S.M. (stores master). The bath-tap key takes the shutter lock, the telephone box lock, attendants' w.c.'s. The stores for males and females have a separate key.

There is a system of tell-tale clocks—one for each side registering in the assistant medical officers' offices, a complete circuit of fire alarm signal stations. Every block and the various administrative offices are in telephonic communication, but it is not possible to be put on directly from the male to the female side; the message from either goes to an exchange and is repeated by the attendant present.

As to the equipment, the contracts were taken in two sections, viz., for the first 500 cases and then for the remainder ; the reason being that the reception of 500 cases would much relieve pressing needs and would in the unfinished state of the asylum be as far as we could go, without interfering with the architect's completion. This division, although giving a great deal more trouble and being in reality equal to furnishing two separate asylums, had its advantages ; we were enabled to get many changes in the fittings and furniture which were considered necessary, and to introduce many useful varieties of these which have since proved to be improvements as to comfort and safety.

The bedsteads are all of iron. They have rubber pads to the feet instead of castors, to prevent rolling and scratching the pitch-pine polished floors. The heads have no rods or bars, but are in one piece of sheet iron, thus affording no hold and suggesting no convenient place for tying a sheet or other article to. They have tinned wire-woven mattresses. The horse-hair mattresses weigh 20lbs. (27lbs. being considered necessary where there are wooden lathes, or canvas and no spring mattress). The bedsteads are of two kinds—high and low ; some of the latter have the feet ending in studs and are locked by a simple adjustment to the floor. This is done in all single rooms furnished with bedsteads. Settees are cushioned in the seats and back. Arm-chairs are carpet or leather-lined, the latter having the arms padded for the elbows—a necessary precaution for the prevention of sores in paralysed and helpless cases, when out of bed. There are Austrian bent-wood arm chairs, as well as ordinary ones. The sofas have no sides and are all upholstered in green American leather. All the floors are beeswaxed and there is no wet scrubbing ; squares of carpet and hearthrugs are spread about. The tables are of three kinds, octagons, small round tables, and long tables of 8, 12, and 18 feet long, and patients may have meals at one and all.

The equipment being for 2,000, it was contracted to supply every patient with four chairs on an average—apart from settees, arm-chairs, or sofas—viz., one for the dining, one for the sitting-room, one for the bedroom—at the head and between each bedstead—and one for the recreation hall, the latter when necessary being also used in that part of the corridor serving as visiting rooms.

The chapel has seats in pitch-pine with backs (but no kneelers), and they are not fixed to the floor.

The clothing for male patients was so arranged as to give each man three suits of clothing—two day or working suits, one for summer and one for winter, as well as one for Sundays, also an Inverness overcoat. The women have no uniform, the patterns of material offering abundant variation.

The equipment of the asylum and mansion-house together with matters not referable to building amounted to £65,689. The total cost of the asylum to date, May, 1896, has been £579,303, which, divided by 2,500, gives a cost of £238 18s. per bed, or excluding cost of land, equipment, etc., £189 14s. per bed. These figures I have obtained through the kindness of Mr. Partridge, the clerk to the Asylums' Committee.

The date of opening had always to be kept in view, for it was much pressed by the Committee, who in their turn were pressed by the parish authorities, for the guardians were compelled, through want of beds in London, to find room for their paupers in private asylums and even hospitals, through the length and breadth of the country, paying in some cases two guineas a week for their accommodation.

In March and April, 1893, therefore, before the reception of patients, a foreman engineer with a staff of workmen were appointed under the direction of Mr. Clifford Smith, the Asylums' Engineer, to test the kitchen, bakery, and laundry plants, also the hot and cold water services, and to familiarise themselves with these various appliances. Meanwhile the equipment was proceeding slowly, officers' quarters could not be got ready, and the different contractors for furniture were unable to deliver by the time fixed. The delay was dispiriting and the pressure to open caused unrest, but it was at last decided to receive patients on May 16th, there being as yet no electric light, so that candles had to be suspended in wire baskets from the ceiling as a temporary illuminant; neither had we gas, so that cooking had to be carried on as best we could in the bakery ovens or on the kitchen range.

The great difficulty, and an anxious one, was the presence of scores of workmen in every part of the asylum and grounds, who, from their number and in consequence of the unfinished state of the place, flocked in and out of every conceivable entrance, and occupied wards into which patients had to be received. After about four weeks, candles gave way to the electric light, gas was used for cooking, the workmen one by one gradually disappeared, and order finally prevailed.

The staff at first engaged were the Medical Superintendent, two assistant medical officers, a matron with an assistant, a steward, clerk, and as few attendants as could possibly be managed, keeping only four or five in reserve for opening the next block, and bearing in mind "maintenance rate," before which all seemingly must bow. On one or two occasions we became short of staff, but almost the whole time the supply, such as it was, was more than the demand. It was about six or seven months after opening, and when we were drawing to our full number, that the greatest difficulty was experienced. We opened in May, and by the following February we had over 2,000 in residence. By this time the novelty of a new place and the excitement of opening were wearing off and we had to settle down to constant hard work. It was then that desertion set in. To fill 250 posts, we had engaged 390 staff; one out of every three engaged left the service; many good nurses and attendants left through ill health from excessive labour and strain; some left because they found the work too hard—which indeed it was, for we had no chronic patients to do it; some left also because they were unwilling to work and were unsuitable for the service, others from not getting promotion, which was very rapid for junior nurses and attendants during the opening.

The officers had many anxieties about the duties, for there were no written rules, and many of the staff were raw and new to asylum work. They had therefore to be specially trained. The exactness with which all the details of service are arranged in the London asylums did much to help us, for the pay, leave, emoluments and rank, etc., are all accurately defined, and are the same throughout the Council's service, which relieved us of some of the disadvantages of being without rules. Much of our difficulty was owing to this great mass of raw unused material which had to be relied upon, but this trust gave them confidence, and there was an earnest desire on their part to be useful, to be appreciated, and to be considered joint-heirs to responsibility.

From May, 1893, to February, 1894, a period of about eight months, 1,140 patients were received as transfers from about forty different asylums and licensed houses; the rest, 860, were acute and recent cases, admitted as they occurred in London, where persons become insane at the rate of over 70 per week. For seven months our admission rate

was about 300 per month, but we never received more than 40 per day.

Every male patient was examined naked and the whole bodily condition was taken on admission, but only the chest (heart and lungs) of the female could be examined until the appointment by the Committee of a lady doctor (subsequently increased to two), when the same complete examination of cases in their wards became possible.

Each patient on admission had a case paper. Their names were attached to their bed, and in many cases they were sewn to the inside of their clothing, but we had much assistance from patients themselves, when receiving transfers, for there was generally one male or female more interested and officious than the rest, who gave the names, history, habits, etc., not only of the patients themselves, but also of the staff who accompanied them. We had periodical reckonings of patients, and a roll call had at stated periods to be arranged for, the names being gone through to ensure identification—often a difficult task, for there were several who gave themselves names other than their own. Shortly after admission every patient was photographed and a copy kept in the case-book, which proved a great help in note-taking and since in the recapture of escapes. We had no serious or fatal accident of any kind, and we had no suicide during the first year or indeed during the second, but the “inevitable” happened in our third.

The discharges “recovered” during the first year were very high, but when calculated, as is usual, upon the percentage of admissions, they were low, and I would remark that the manner of calculating upon the percentage of admissions appears to be somewhat anomalous and fallacious. The result is decidedly against a new asylum with a high admission rate, for the higher the admission rate, in a sense, the lower for a particular period will be the “discharged recovered” rate. The more fair method seems to me, that one based upon the average number resident, but the most exact and correct one is that based upon the total number under treatment. As is usual the recoveries occurred in those who had been about three months under treatment, but several unfavourable and restless chronic cases recovered. As to these few, I am not at all sure that the excitement of transferring them from other places, the novelty of their surroundings, the “bustle” of their new life, and the sort of “picnic” existence they lived, gave

them a new zest and a fresh vigour, which unconsciously encouraged them into convalescence, perhaps by opening up new association tracts and exciting fresh nerve ganglia, and perhaps also by refreshing the old paths with new stimuli.

The relapses, as may be expected, in so short a time, were hardly a noticeable factor.

As to the death-rate, it occurred from among the transfers, and it is my opinion that chronic lunatics as a rule bear removal badly. Probably they get accustomed—in a dull but fixed way—to their old surroundings and settle down with difficulty to new habits, as is noticed in a similar degree in old emigrants, who are out of all proportion less successful than the young.

The task of opening so enormous a place has not been a light one; but the strain, the wear and tear, and the anxieties have been greatly relieved by the friendly help of colleagues and the indulgent and sympathetic support of one's Committee.

The Detection of Insanity in Prisons. By J. J. PITCAIRN, L.R.C.P., M.R.C.S., M.P.C.; H.M. Prison, Holloway.

It is frequently levied as a reproach to prison surgeons that they fail to realise how slender and impalpable is the border-line between crime and insanity, and that the proper inmates of an asylum are too frequently treated with the penal discipline of a prison.

In some instances, it is true, the privilege of private practice in combination with his official duties forbids the medical officer of a prison preserving that acquaintance with mental diseases which is nowadays expected from the holders of such appointments. But he is at a disadvantage in respect of the large number of individuals at any given moment for whose physical health he is responsible, and also from the rapidity with which they usually pass through his hands.

The minor officials of a prison, in the routine discharge of their duties, are apt to regard all but the coarser symptoms of mental derangement as the natural concomitant of the tendencies which have placed the individual prisoner under their charge. Thus, to take only the cases of the kleptomaniac or the sexual pervert, who are of necessity deprived of all opportunity of a repetition of the acts which have landed them in prison, the mere observance of the comparatively

simple regulations insures their being classed for all purposes of prison discipline with the highest intellects around them. Moreover, the prison surgeon has no trained subordinates to give him warning of the onset of a fresh train of psychologic symptoms, the earlier manifestations of such an affection as general paralysis, for instance, being in prisons peculiarly liable to confusion with more innocent mental processes.

But these remarks apply chiefly to the subject of convicted criminals. The prisoner who is merely remanded to gaol or committed for trial is on a different footing altogether. Detained merely for safe custody he is allowed to receive daily visits from his friends and legal advisers, to write and receive letters, and is, in short, not so entirely cut off from the world at large as his convicted brother. The opportunity for mental observation is thus infinitely increased, and it is on this point that I propose to dwell in the following observations.

Having been attached for several years to Holloway Prison—the largest dépôt I believe for untried prisoners in the world—I am in a position to speak as to the system which is in force there for the mental observation of untried prisoners. There are at present four prisons in London—Pentonville, Wandsworth, Wormwood Scrubs, and Holloway. The first three are of about the same size, averaging daily one thousand inmates; Holloway, with an average daily number of seven hundred, serving as the “House of Detention” or dépôt for the others. Since all prisoners on remand or awaiting trial are detained at Holloway, being only distributed to the other London prisons on conviction, it will readily be seen how large a proportion of the criminal population of the metropolis passes through this prison, and how it may be utilised as a species of filtering-bed to retain and segregate those found to be mentally deficient. Under the system in force it is difficult for a prisoner who is remanded or committed for trial to be convicted should he show any indication of insanity.

In the first place if a magistrate on whose warrant a person is committed to prison has information supplied to him, or is of opinion that there are circumstances in the case or in the prisoner's demeanour which render his sanity open to question, he endorses the warrant with a memorandum specially drawing the attention of the medical officer of the prison to the case. The prisoner is in consequence placed

on his arrival under careful observation, is the subject of repeated interviews, detailed notes of which are preserved, and, at the expiration of a period seldom exceeding a week, is discharged, to appear again before the magistrate with a report as to his mental condition, based on the prolonged observation he has undergone.

The following table shows the number of prisoners who have been so treated during the six years ending March, 1896:—

TABLE I.—Prisoners Remanded for Observation and Report.

Year.	Male.	Female.	Total.
1890-91	290	136	426
1891-92	312	143	455
1892-93	328	118	446
1893-94	390	147	537
1894-95	323	140	463
1895-96	371	164	535
Totals ...	2,014	848	2,862

It is a common occurrence for the relations or friends of a remanded prisoner to communicate directly with the prison authorities informing them of previously insane conduct on his part. They are in consequence placed under the method of observation already described, together with other prisoners whose conduct may have been described as “strange” by the warders under whose charge they are. These officers, by dint of long experience, are well able to detect the more salient symptoms of mental disease, many of them indeed—I speak only of those at Holloway—being quite equal in this respect to the average asylum attendant. Another safeguard which has been adopted at the House of Detention is to regard every prisoner who is charged with serious crime as *ipso facto* an “observation case.”

The next table shows the cases treated as above.

TABLE II.—Observation Cases not Specially Remanded.

Year.	Male.	Female.	Total.
1890-91	290	158	448
1891-92	286	149	435
1892-93	267	190	457
1893-94	279	240	519
1894-95	346	276	622
1895-96	316	264	580
Totals ...	1,784	1,277	3,061

In the two preceding tables are included a certain number of prisoners who were charged with attempted suicide. It is the practice to keep all such cases under observation as has been described. Many of them are found on reception to be still suffering from the more or less recent effects of poison, wounds, or other injuries, whilst some are still suicidal and, of course, require careful watching. The course usually pursued by the London police magistrates of remanding suicidal persons to Holloway for a week appears to be on the whole a judicious one. The wholesome restraint during that period is calculated to deter from a further misdemeanour, which is of far commoner occurrence than is at all generally supposed, whilst the observation and examination to which the would-be suicides are subjected are sure to result in the detection, and consequent removal to an asylum, of any latent case of insanity. The following table gives the numbers of this class of prisoners :—

TABLE III.--Prisoners under Observation for Attempted Suicide.

<i>Year.</i>	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>
1890-91	190	170	360
1891-92	178	213	391
1892-93	195	247	442
1893-94	275	198	473
1894-95	213	212	425
1895-96	200	210	410
Totals ...	1,251	1,250	2,501

If from the gravity of the crime with which he is charged or other causes a prisoner concerning whose sanity a doubt has arisen is committed to the Central Criminal Court or one of the six Quarter Sessions held in the Metropolitan area, the medical officer of the House of Detention has been for long expected to attend and give the required information to the judge. At the same time it is the routine custom for the Solicitor to the Treasury in all cases of serious crime to send a copy of the depositions to the medical officer of the prison, who in due course furnishes a report as to the prisoner's responsibility, the view taken by him being accepted by the prosecution.

The number of instances in which prisoners charged with serious offences have under this system been found to be

insane is shown in Table IV. for the same period as the preceding ones.

TABLE IV.—Prisoners found Insane at their Trial.

<i>Year.</i>	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>
1890-91	10	5	15
1891-92	9	5	14
1892-93	6	3	9
1893-94	12	5	17
1894-95	12	1	13
1895-96	12	4	16
Totals ...	61	23	84

The course adopted when a prisoner is reported as insane to a court of summary jurisdiction is for the magistrate to remand him to the workhouse, where he is dealt with as a pauper lunatic, and after the usual formalities before a Justice is removed to the asylum of the district. The number of persons found to be insane as a result of their examination in Holloway Prison (excluding those enumerated in Table IV.) is as follows:—

TABLE V.—Prisoners Reported Insane to Police Courts.

<i>Year.</i>	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>
1890-91	167	51	218
1891-92	184	61	245
1892-93	157	40	197
1893-94	167	63	230
1894-95	169	71	240
1895-96	203	101	304
Totals ...	1,047	387	1,434

The preceding series of tables afford some index, so far indeed as mere figures can, to the measures adopted for the recognition of insanity among untried prisoners in London.

It would be absurd to claim that out of an annual population of over twenty-two thousand, drawn from an area of close upon two hundred square miles, every case of insanity is detected and treated on its merits. But the comparatively small proportion who are placed under observation represents a daily average of four fresh cases. Amongst these acute mental disorder is found in all stages, chiefly in the form of alcoholic or homicidal mania, melancholia with actively suicidal tendencies, and the more aggressive forms of general paralysis.

In the light of the recent report of the Criminal Responsibility Committee of the Association it is worthy of note that this steady flow of acute cases occurs in an institution which has hitherto possessed neither the staff nor the accommodation of an asylum, whilst their numbers have apparently tended to support the now exploded fallacy that imprisonment is a cause of insanity.

*Mental Disease (not General Paralysis) associated with Tabes Dorsalis.** By P. W. MACDONALD, M.D., and A. DAVIDSON, M.B., Dorset County Asylum.

The object of this paper is not so much to relate anything that is new as to show that mental symptoms are not always easy of classification when associated with organic changes in nerve tracts outside the cerebral cavity.

We have had doubts as regards a heading to this contribution mainly because of the often accepted doctrine that general paralysis is, *per se*, the mental condition associated with tabes. Now while not questioning the general validity of this doctrine, we wish to take exception to its infallibility, and by the aid of a most interesting case will endeavour to show that you do meet with patients suffering from ataxy with mental symptoms amounting to insanity and yet not general paralysis.

W. C., æt. 39. Supposed to be a sailor; found wandering; was admitted on May 1st, 1896. The medical certificate was as follows:—Facts observed: Evidence of general paralysis of the insane—plus locomotor ataxy, viz., no patellar reflex—ataxy in gait; tremulous slurred speech, internal strabismus in left eye; pupils—right, Argyll Robertson; longitudinal tremor of tongue; flushed greasy skin, very feeble grasp, and strength small in all movement. Trying to give dates and places where he has been lately, gets confused and cannot give the dates.

Facts communicated: “At the station (police) sat hitting his face hard several minutes until the nose bled. Attempted to hit the constables.”

Notes on admission:—Physical: Poorly nourished, eyes prominent, inequality of pupils, neither react to light but both to accommodation, internal strabismus of left, slight nystagmus, patellar tendon and plantar reflexes absent, no ankle clonus,

* Read at the Autumn Meeting of the South-Western Division, Salisbury, 1896.

tongue protruded to right side, no fibrillary tremors. Mental: Speaks in a slow drawling fashion, lost and wandering as regards dates, confused and broods over his "locomotor ataxy." When asked any question invariably answers "Locomotor ataxy." Irritable and emotional. He cannot carry on a conversation.

No previous or family history to be obtained. There is a suspicion of syphilis, but no definite facts.

During the months of May, June, and July the case attracted much notice and received exceptional attention. The symptoms did not vary to any marked degree. The visual symptoms were very constant, and at times there was well-marked hemianæsthesia. There was also diplopia. He was subject to fits of great irritability, followed by periods of emotion and absolute mental confusion. He suffered from auditory hallucinations. The physical condition improved and he was generally more satisfactory when on August 16th he was suddenly seized with an epileptiform attack. He was sitting on a chair and without any warning fell forward on the floor, bruising his nose. The attack was genuinely epileptiform. Eyes, face, and body drawn to right side, strong spasms of right side, of arm more than leg. Much froth and quite unconscious. He continued having seizures at short intervals during the night of the 16th and all next day. Chloral was administered, but though the seizures ceased for a few hours he did not show any signs of rallying, and after struggling in a semi-comatose condition for close upon 12 hours he died early on the morning of the 18th.

Section; 24 hours after death.—Body well nourished, post-mortem lividity and rigidity marked, limbs and chest elaborately tattooed.

Head:—Scalp of average thickness, skull thin, diploe marked, inner table congested. Dura mater: Average thickness, congested, not adherent to skull. Pia arachnoid markedly thickened and congested, more especially over left hemisphere; no miliness; stripped readily from cortex. Cerebro-spinal fluid in great excess. Vessels at base healthy; lateral and longitudinal sinuses filled with red clot.

Convulsions:—Numerous localised areas of atrophy over both hemispheres, more especially over upper Rolandic regions. Areas of atrophy well marked by little lakes of cerebro-spinal fluid.

General consistence of brain firm. On section grey matter thinner than usual, and congested, left side more than right. White matter firm and congested. Vessels coarse. Lateral ventricles of normal size, no granulations, choroid plexus normal.

Basal ganglia congested; pons and medulla congested; fourth ventricle no granulations. Cerebellum: Pia uniformly congested, strips readily. Substance congested. Spinal cord: Membranes slightly congested, sclerosis of posterior columns. Other organs healthy.—Sections were made through the cord in cervical

dorsal and lumbar regions. In every case the postero-median columns were found to be completely sclerosed and the postero-external to a varying degree in the different regions. In the sclerosed tissue were numerous colloid bodies. The arteriole walls were considerably thickened, more especially the adventitia and outer coat.

The chief interest of this case centres in the mental condition, which to us is exceptional and rare. The tabetic symptoms are of the ordinary type and fully pathognomonic of the disease.

For this reason we were somewhat surprised with the certificate of the certifying medical attendant; for though in that certificate he makes use of the phrase "general paralysis," he did not record any of the prominent symptoms of that disease.

He mentioned several of the more common and special signs of locomotor ataxy. On admission and afterwards we failed to discover symptoms or signs of general paralysis, yet we are quite willing to admit that anyone inexperienced in mental diseases might have been misled, nor is this to be wondered at when on referring to the better known textbooks on nervous diseases you find such statements as these. Dr. Bastian, in speaking of the association of locomotor ataxy with other nervous diseases, says: "Seeing that in locomotor ataxy itself there are no signs of mental disorder, the supervention of general paralysis of the insane is marked off by a well-defined change in the symptomatology." Again Marie says: "Psychical derangements vary considerably, and while the association with general paralysis is a real one, the intellectual disorders are not usually associated with ataxy." Gowers does not even refer to mental symptoms other than those of general paralysis.

After such a consensus of opinion it may perhaps seem rather bold on our part to raise a discordant note or a different opinion, but with the facts of a well-marked case fresh in our minds, we hope, not unprofitably, to ask you to consider (with us) whether many of the so-called cases of general paralysis supervening on true and simple tabes should not be received with reserve.

Not long ago Dr. Hyslop had the courage of his convictions to question the accuracy of the present day application of the term general paralysis, and we would venture to suggest that the case brought under your notice to-day is one of those in which there is much need for a better understanding and

clearer definition of mental symptoms simulating general paralysis.

We had in this case a true condition of mental enfeeblement and perversion mainly dependent on and of subsequent origin to the original disease in the spinal cord. There existed a state of irritability, low spirits, vague ideas of persecution, sensory disturbances amounting to actual delusions such as "that people were injuring him," "that his food was poisoned," etc.

Dr. Savage says: "The chief symptoms that have been described as occurring with locomotor ataxy are those of suspicion, and it is interesting to be able to trace a direct connection between the morbid sensations of a patient suffering from ataxy with delusions."

It is in the stage of partial dementia that a mistake in diagnosis is likely to be made. Dr. Handford records an interesting case in the January number of *Brain* for 1889, and in the course of his remarks says: "I have long been accustomed to associate some appreciable degree of mental change with the majority of cases of chronic cord degeneration." "The mental aspect in cases of cord degeneration has seemed to me to tend towards melancholia, with discontent and quarrelsome dissatisfaction." "It is reasonable therefore to infer that of the same, or similar character to the system degeneration in the cord, there is a degradation of that perfect state of nutrition of the cerebrum." According to Marie and others epileptiform attacks are not an unusual termination of locomotor ataxy, consequently the somewhat sudden termination of this case was in accordance with the above facts.

From the pathological standpoint the case is still more definite. On the post-mortem table, in the laboratory, and under the field of the microscope we had plain and unmistakable evidence of ataxy, but no evidence of general paralysis.

The cause of the epileptiform seizures is not without its interest, and in our opinion was due to the enormous excess of cerebro-spinal fluid.

From the above it is evident that in this case slow progressive degeneration was proceeding *pari passu* in cord and cerebrum, producing in the one case the progressive signs of locomotor ataxy, and in the other progressive clouding of the mental faculties, but which, contrary to the often accepted opinion, did not take the form of general paralysis of the insane.

What we wish more especially to point out is the great need for more thorough work and closer investigation of mental disease associated with organic lesions of the cord, and to point out that the octopus of mental disease, general paralysis, must not spread out one of its arms to include cases of primary organic lesion of the cord with symptoms of progressive mental deterioration such as the above.

Discussion.

The PRESIDENT said that he had seen a large number of cases of tabes without any symptoms of general paralysis; but with very distinct forms of mental disease. A most frequent form among the cases that were not general paralysis was the delusion of persecution. He had once seen melancholia with tabes; and also patients with that form of mental disease which went more properly under the heading of primary deterioration. Some cases had not the typical characteristics of tabes, and these were extremely difficult to decide on.

Dr. BRISCOE said he had seen at Guy's Hospital a man who was admitted with unmistakable symptoms of locomotor ataxy, who suddenly became unconscious and afterwards developed the delusion that he was going to be smothered. That patient was removed to Bethlem, where the mental trouble disappeared, although the ataxy remained.

Dr. MACDONALD said that his main object was to stimulate careful and thorough investigation in every case of general nerve break-down. It was possible that they had been induced to look upon the facts recorded in this communication as exceptional, because of the scanty and imperfect references to such cases in the majority of text-books. They did not, however, wish it to go forth that they held that locomotor ataxy and simple mental symptoms such as met with in the case under consideration were the general rule, but they did maintain that cases are recorded under the heading of general paralysis, following or preceding tabes, which are cases of tabetic insanity. In a recent number of the *Journal of Mental Science* such a case was reported, from an Irish asylum, minus pathological or microscopical facts. It would have been easy and convenient to have labelled our case one of general paralysis; but this we did not do. The subsequent history and pathological data clearly support our diagnosis. There was complete absence of fibrillar tremors, which he (the speaker) considered one of the most reliable symptoms of general paralysis.

*Note on Weigert's Theory regarding the Structure of the Neuroglia.** By W. FORD ROBERTSON, M.D., Pathologist to the Royal Edinburgh Asylum.

For some years past the leading authorities have been generally agreed that the neuroglia is a tissue composed exclusively of special cells and their processes. Ramon y Cajal, for example, describes it as consisting of small cells provided with very fine, wavy, and only slightly ramified processes, which, after a variable course, terminate freely or attach themselves to the surface of the capillaries. From observa-

* Abstract of Paper read at the meeting of the Scottish Division of the Medico-Psychological Association held in Edinburgh on the 12th November 1896, and illustrated by a microscopic demonstration.

tions made with the aid of a new method, Professor Weigert, of Frankfurt, has arrived at a theory regarding the constitution of the neuroglia which is diametrically opposed to this now generally accepted view. He published a preliminary note on the subject in 1890, but it was only a year ago that he gave a full account of his researches, together with a description of an important improvement in his method.* This improved method, in which methyl violet is the staining agent employed, is one that is exceedingly complicated and troublesome to carry out. It gives preparations in which the neuroglia-fibres and the nuclei of the neuroglia-cells are stained violet, while the protoplasm of the cells remains unstained and invisible. The reaction succeeds only in the human subject, and, as a rule, only with tissues that are moderately fresh. The results that he has obtained with this method have led Weigert to advocate the view that the neuroglia-fibres, which have hitherto been regarded as processes of the Deiters' cells, are chemically distinct, and morphologically separate, from the cell-protoplasm; in other words that the fibres which are stained violet in his preparations are not processes of the cells, but are completely differentiated from them. It is clear that we cannot rightly understand the nature of the pathological changes that occur in the neuroglia until this question of the structure of the normal tissue is settled in our minds. Weigert's theory is certain to give rise to a large amount of discussion in the near future. I wish now to offer merely a small contribution to that discussion. I have for some weeks been working with Weigert's method in the course of a study of the normal histology and pathological anatomy of the neuroglia. Already I feel convinced in my own mind that Weigert has been led into an error by certain fallacious appearances produced by his method, and that the older view of the structure of the neuroglia is the correct one.

Before proceeding to state what appears to me to be the case against Weigert's theory I wish to refer for a moment to Ranvier's theory of the structure of the neuroglia. This theory has generally, I think, been understood to be merely that the neuroglia-fibres pass uninterruptedly through the protoplasm of the cells. Weigert, however, interprets it in such a way as to make it identical with his own, that is to say as implying that the fibres do not even pass into the

* *Beiträge zur Kenntnis der normalen menschlichen Neuroglia.* Frankfurt, 1895.

protoplasm, but are lying outside it, and are altogether anatomically distinct from it. He has attached great importance to the fact that the appearances obtained by his own method thus coincide with those described by Ranvier. Other authorities, however, including Golgi, who have carefully studied preparations made by Ranvier's method, have stated that they are convinced that the appearance of fibrils passing through the protoplasm is due merely to lines of shrinkage produced by the osmic acid employed.

The following are some of the more important considerations that seem to me to disprove Weigert's theory. In the first place the appearances presented by the neuroglia in sections prepared by the fresh method of Bevan Lewis are entirely inconsistent with it, seeming to show with perfect clearness that the fibres are anatomically continuous with the protoplasm of the cells. It is true that the fibres cannot generally be distinguished in the normal human brain by this method, but they can be clearly seen in some of the lower animals, especially the sheep, and they can be readily observed in the hypertrophied state in the human brain. Such preparations show that the neuroglia-cells have an irregular spinous form, and that the fibres are given off only at the tips of the spines. If these fibres had no anatomical continuity with the protoplasm they would surely not have this special relationship to it. In his historical review Weigert makes no reference to Bevan Lewis's work, and appears never to have seen neuroglia-cells in fresh sections.

Again, the appearances presented by the neuroglia-cells in preparations by Golgi's method are equally inconsistent with Weigert's theory. Golgi's method generally picks out only an occasional neuroglia-cell along with the fibres which radiate from it, while scores of adjoining cells and fibres are left unstained. If, as Weigert would have us believe, these cells have no anatomical continuity with the fibres, but form merely centres of radiation for them, it seems impossible to understand why a cell and the fibres radiating from it should display this peculiar chemical identity which results in their being darkened by the silver or mercuric salt to the exclusion of neighbouring cells and fibres. Weigert, as far as I can ascertain, makes no attempt to meet this difficulty in the way of accepting his theory. His argument in opposition to the apparent demonstration of the continuity of neuroglia-cells and fibres furnished by Golgi's method amounts in

effect simply to this, that in preparations by his own method such continuity cannot be seen, and that therefore the pictures given by Golgi's process must be fallacious. It appears to me that on this method of reasoning the positive evidence of continuity furnished by Golgi's method must far outweigh the negative evidence of Weigert's method.

It is true, however, that Weigert does adduce a certain amount of positive evidence in support of his theory. One of the points he most strongly insists upon is that the fibres may often be seen in the form of an uninterrupted thread, which either passes straight across the cell or curves back in the vicinity of the nucleus. I think it may be shown that there are two fallacies here which destroy the otherwise important value which these appearances would have in support of the new theory. Firstly, the fibres which pass straight across the cells can be shown in many instances to be the processes of other cells, and therefore it is possible that they are in every instance to be explained in this way. Secondly, I think it can be shown that the recurving fibres are not continuous fibres at all. In successful preparations by Weigert's method the protoplasm of the neuroglia-cells is invisible. But in preparations in which the reaction is incomplete—as in tissues from the human subject which have not been obtained sufficiently fresh or in which the neuroglia-cells are hypertrophied, or in tissues from the lower animals—the protoplasm is often visible, being faintly stained of a violet or yellow colour, while the fibres at the same time may be quite distinct. The protoplasm can also be demonstrated, even in perfectly successful Weigert preparations, by means of counter-stains, which, however, are somewhat difficult to apply. Now such preparations serve, I think, to demonstrate that the appearance of a recurving fibre results simply from the circumstance that the margin of the cell-protoplasm retains the violet stain, and thus produces a seeming continuity of adjacent fibres. Neuroglia-cells appear to have an envelope which, like their nuclear envelope, is stained violet by Weigert's process. The nucleus is a regular rounded body, and therefore in optical section its membrane appears as a ring. But the cell-body, which usually extends a considerable distance from the nucleus, has an extremely irregular and spinous form, so that its whole outline is practically never seen in one focus. If the cell had been flat then in Weigert's preparations the protoplasm would have appeared limited by a continuous thin violet line running

into the fibres (which would thus appear to fork as they approached the cell) at the tips of the large processes. Now in such preparations, by careful focussing, one can indeed frequently trace this deeply stained membrane almost completely round the cell, and forking of the fibres can be recognised in the vicinity of almost every nucleus. Further, it is probable that the contraction of the cell by the hardening mixture employed may produce in the cell-membrane lines of shrinkage which appear as specially dark bands in the stained preparations. It is exactly along the sickle-shaped edges of the protoplasm uniting adjacent processes that such lines of shrinkage would appear. In these ways I think one can fully explain the appearance of recurving fibres to which Weigert attaches so much importance. It is produced simply by two separate fibres being joined by the stained—perhaps sometimes shrunken—cellular membrane.

Since making the observations upon which the foregoing criticism of Weigert's theory is chiefly based, I have read a paper recently published by Pellizzi* on the structure of granulations of the ependyma, in which he argues at considerable length against Weigert's views. As the article is one of the first contributions to the discussion that has appeared, I shall briefly state its chief points.

Pellizzi finds that in preparations of granulations of the ependyma stained by Weigert's method, the protoplasm of the hypertrophied neuroglia-cells is stained of a yellow colour, and can thus be easily distinguished. The fibres are much thickened, especially at one extremity, which either bifurcates or forms a membranous expansion, which is coloured somewhat less intensely than the fibre. These specially thickened extremities of the fibres appear often to be placed against a neuroglia-cell. He contends that the circumstance that with this method one cannot recognise direct connections between the fibres and the cell, does not suffice to disprove the existence of such connections. It would be as rational, he says, to deny the existence of the protoplasm of the neuroglia-cell, adducing as a reason that it is not seen. He objects to such conclusions being based upon the appearances obtained by a single method, and says that by using a variety of methods it becomes perfectly evident that the true structure of the neuroglia is such as has been described by Golgi.

* *Rivista Sperimentale di Freniatria*, 1896, p. 466.

Discussion.

Dr. CLOUSTON thought that every attempt, such as Dr. Robertson had made, to find out normal structure would enable them better to understand the meaning of the pathological conditions of the neuroglia. It was generally understood that Dr. Bevan Lewis had made a mistake in looking upon the enlarged neuroglia cells as scavenger cells, and if their normal structure had been better understood he would probably not have fallen into that error. It seemed possible that these cells were for more than merely binding, like guy-ropes, the whole of the other tissues, though such binding cells must be necessary. They now saw how hypertrophy of the neuroglia cells seemed to cause a disturbance of the other structures of the nervous system. He could only say with regard to Weigert's theory that, so far as his examination of the specimens went, he was satisfied that Dr. Ford Robertson's view was correct.

The Significance of Palatal Deformities in Idiots. By
WALTER CHANNING, M.D.,* Brookline, Mass., U.S.A.

The present is the day when we are searching for any deviation from the normal type, that we may put it down as a sign of degeneracy, a word that is having a more and more extended meaning, and is already serving an evil purpose as signifying more than is actually warranted. Formerly a degenerate was an individual so different physically and mentally from the average, that he could be set off into a class by himself. We knew him when we saw him, because he *was* distinct from the average. Now it needs only some slight imperfection of development in an organ, or tissue, or some slight irregularity of action in the brain as shown in speech, or action, to brand an individual as presenting indications of degeneration.

Science, usually slow to reach conclusions, has been too quick, it seems to me, in accepting fragmentary bits of evidence as proving the whole case. Because departures from the normal are found physically, mentally, and morally in the defective classes, therefore scientific investigators have assumed that any one of these departures, occurring in the average individual, gives rise to the suspicion that the process of deterioration is already under way in him.

While I believe in most carefully noting and investigating anything of a pathological nature, I think we should resist the tendency to attribute so many things to degeneration, until the case is proven. Where is our standard of the absolutely normal? Are we as yet justified in saying anything more than that man is leading an ever changing life

* Portion of a paper read July 24, 1896, at the Annual Meeting of the Medico-Psychological Association of Great Britain.

from age to age, to which he struggles, under the domination of certain laws, to adjust himself? Why should he have five fingers or toes, thirty-two teeth, a flat palate, or keen scent, if these things are no longer of service to him? What he needs is what will be of the most use to him in asserting himself in society. Though physically perfect, he might be, as the highest type of spiritual man, weak and incompetent.

It is in this broader sense that I believe we should conduct our researches, and consider degeneracy as a *sum total* of conditions, and not the outcome, or synonym of *one single aberration*. I agree with what Dr. Nicolson has recently said on the work done by so-called criminalists. "It has been the fashion for some years," he writes, "... to deal with the practical psychology and the crimes and conduct of criminals and the criminal classes under such imposing designations as criminology, criminal anthropology, and the like. Well, I have no more objection to the use of these terms than I would have to the use of the terms doctorology, parsonology, shoemaker anthropology as applied to the study of other groups of men who follow special occupations in life.

"Writers give us a copious and precise history of the anatomical configuration, the physiological eccentricities, the complexion, the shape of the ear and nose, the tattoo marks, etc., in certain criminals. We get a striking and elaborated account of their numerous fearful crimes, of their atrocious mental peculiarities, and hideous moral obliquities. . . . The whole picture is by some writers exaggerated to distortion as regards even the few, and it is in its main features so spurious and unfair as regards the many that it becomes impossible to regard the conclusions or assumptions to be either authentic or authoritative." *

The hard palate, being comparatively convenient of access, and therefore easily studied, has of recent years come prominently into the foreground as the seat of some of the most pronounced changes due to degeneration. Indeed a recent writer says: "I may not be able to say what Dr. Amadégoux said of the ear, 'Show me your ear, and I will tell you who you are, whence you came, and where you go;' but I will say, 'Show me your palate, and I will probably be able to tell whether you belong to the great class tainted

* Presidential Address by David Nicolson, M.D., *Journal of Mental Science* Oct., 1895

by heredity, comprising many insane, imbecile, feeble-minded, criminal, eccentric, epileptic, hysterical, or neurasthenic individuals."* I fear we are all of us *tainted* by heredity, and very few or none of us can say that there may not have been some one of the many varieties of cerebral or nervous weakness enumerated, either directly or remotely, in our families. Are we all then the possessors of deformed palates? Are we to believe that we belong to the degenerate class, if we possess these palates, or per contra, that if we do not possess them, we do not belong to this class?

Now I wish to take issue with those who place such importance on a peculiar shape of the palate as one of the most characteristic and significant of the stigmata of degeneracy, for I believe there is not as yet evidence to warrant such a conclusion.

There have been altogether many writers on the subject of the hard palate, but in a number of cases their work has been incomplete, and proved either too little or too much. Dr. Down, nearly thirty years ago, was perhaps the first to call attention to the narrow palate in idiots, and being struck by its peculiar wedge-shape, adopted a partial nomenclature, one variety of which was the "V-shape." He stated that this kind of palate was characteristic of a very large class of idiots, in fact that there was in the congenital idiot a particular kind of deformed palate. His observations were founded on an inspection of only two hundred cases, yet to this day the idea advanced by him still prevails to some extent. The first person to be struck by the too sweeping character of his assertions was an American dentist, Dr. Norman W. Kingsley, who examined the palates of two hundred of the idiots on Randall's Island, and could find none of the kind described by Dr. Down. Later he went to the Earlswood Institution in England, and in company with Dr. Down examined the palates of the inmates. He found only from five to ten per cent. deformed to any extent, and he stated that palates of idiots were not different from those of ordinary individuals coming to him for treatment. Here we have the statements of two observers, each one perhaps extreme in its way, yet Dr. Kingsley was a trained dentist of acknowledged skill and accuracy, and certainly his conclusions were entitled to as much weight as those of Dr. Down. Unfortunately, however, they have been lost sight of, and until recently the

* *Deformities of the Hard Palate in Degenerates.* By F. Peterson, M.D.

dictum of Dr. Down has been accepted unhesitatingly, and *in toto*.

Leaving out of consideration a long list of writers following Dr. Down, I wish to next briefly allude to the work done by Dr. Clouston and described in his work on the *Neuroses of Development* and published in 1891. He regards a change in the normal shape of the hard palate as a very interesting, and, in his opinion, "very important morphological accompaniment of many of the developmental neuroses. . . . The importance of this change consists, not in any direct effects of the palate, bad or good, but in the indication as to brain constitution which it affords."* Dr. Clouston thought his assumptions amply borne out by some investigations he made on 604 of the general population, 286 criminals, 761 persons with acquired insanity, 44 epileptics, 171 persons with adolescent insanity, and 169 idiots and imbeciles. His general population statistics were based on 363 casts from a local dentist, all of his asylum officials, and the boys in a private school, certainly a heterogeneous mixture. The 286 criminals he examined and classified in two days.

He was enabled to proceed in this rapid manner because he "thought it impossible to express the differences and agreements in size and shape of a series of irregular ovoid cavities, like the hollow of the palate in different cases, by lines across, or round special parts of them. . . . After very careful consideration he considered that the simplest and the best way was to adopt a classification that most of them (the palates) seemed to him to fall into naturally." He divided them into three groups of the "Typical," the "Neurotic," and the "Deformed."†

He says "that like all things in nature, the three classes ran imperceptibly into each other with no abrupt line of demarkation, so that there were a number of cases where one had to use one's best judgment in determining the class they were to be put into, and two persons might in regard to those cases have classified them differently."‡ Here he states a dangerous source of error, for not only was his method of classification arbitrary, and therefore especially influenced by the personal equation, but further his chance of observation being largely limited to an inspection of the mouth with the eye in cases often difficult to control, a partially wrong impression might have been obtained.

* *The Neuroses of Development*. By T. S. Clouston, M.D., p. 42.

† *Op. cit.*, p. 45.

‡ *Op. cit.*, p. 46.

Talbot says "that the terms adopted by Clouston hardly define the condition of the vaults. Thus a normal jaw may contain a vault ranging all the way from .21 of an inch, the lowest he has ever seen, to .88 of an inch, the highest he has ever seen, and all in a perfectly normal condition. If . . . a normal arch is like the horse-shoe arch of Ivy's, what shall we call a normal arch that is .25 of an inch higher or lower? The neurotic arch, Clouston says, "is more of a Gothic arch, with the alveoli tending to run more parallel and narrow down, the roof of which is formed by a larger part of a smaller circle." Talbot has observed neurotic arches very high and narrow, high and broad, low and both narrow and broad, with marked neurotic jaws, face, and head. The third class, which Clouston terms "Deformed," comprise the V and saddle jaws.*

Dr. Peterson, of New York, has recently suggested a classification of pathological palates composed of seven varieties as follows: A. Palate with Gothic arch; B. Palate with horse-shoe arch; C. The dome-shaped palate; D. The flat-roofed palate; E. The high-roofed palate; F. The asymmetrical palate; G. The *torus palatinus*.† While such a classification is suggestive and interesting, it is impossible to convey by the use of these terms anything more than a very imperfect idea of the almost indefinite varieties of form that palates assume. The *torus palatinus* in my series of casts is present in a very small number of cases. The various shapes of the vault of the palate are often secondary, and even if falling within one of the above varieties of classification, have a pathological value largely relative to the age of the subject, his size, his build, &c. The palate with the horseshoe arch, which is entirely different from that figured in Dr. Peterson's article, is usually regarded as the type of the normal palate.

At this point I wish to say that, in my opinion, observations made by simple eye inspection are not sufficiently accurate to serve as a basis of reliable statistics. Even with a cast to examine at leisure it is no easy matter for different persons to come to an agreement in a doubtful case, as I have found out by experience, and in a hurried glance into a mouth in such a case, I should not regard it as possible to come to any conclusion. Therefore, when I know that

* *Etiology of Osseous Deformities of the Head, Face, Jaws, and Teeth.* By Eugene S. Talbot, M.D., D.D.S., p. 332.

† *Deformities of the Hard Palate in Degenerates.* By F. Peterson, M.D.

neither measurements nor casts have been used in a series of observations I feel obliged to question their accuracy *because of the method* which has been pursued.

Measurements, in Dr Talbot's opinion, are a necessity, if we are to understand in precise figures what is meant by a wide or narrow arch, a long or short arch, and a high or low vault. A standard of the dimensions of the normal palate having been once fixed by the measurement of a very large number of normal individuals, he thinks we have a control to serve as a means of comparison. It is, however, no easy matter to take the necessary measurements on the living subject, especially if he be insane or feeble-minded, and in many cases I should question their accuracy, when made with instruments that I have so far seen.

Measurements do not, however, adequately give the shape or contour of the palate, but only its size. In different varieties of palates we get similar diameters. To determine accurately how the palate is shaped it is best to take casts. Once having made these we can pursue our studies with all the deliberation necessary, and if we are right or wrong we can prove it definitely not only to ourselves, but what is quite as important, to others. If we make mistakes they will be obvious and can be corrected, for the basis of observations is always in evidence. Such is not the case with a simple eye investigation, as has been proved many times over. Infinite harm can however be done by opinions authoritatively announced on insufficient data. The correction of such opinions, when wrong, never attains the publicity of the original announcement.

In adopting a classification of palates, I have to some extent followed that used by Dr. Eugene S. Talbot, who has done, as far as I know, much more work on the palate than any other person living. He is a man of untiring energy and great ability, and while I should not always agree with his conclusions, I must at the same time acknowledge that his opinions are entitled to great weight. He makes use of few of the conventional expressions, avoiding such terms as the "Gothic" arch, the "keel" and "prow-shaped" arch, the "dome-shaped" palate, &c. Some writers in their descriptions of the palate confuse the arch and the vault, using them synonymously, but this is a wrong use of terms which should be carefully guarded against.

The vault means the whole roof of the mouth. The span of the top of the palate. The dome of the mouth, as the

sky is the dome of the earth. The arch of the vault might be correctly used as an expression, but I think it desirable not to make use of it. The true arch of the upper jaw is that formed by the teeth, as they are embedded in the alveolar process of the superior maxillary bones.

"It may be well to state at the outset," Talbot says, "that the only structures involved in the formation of these deformities (V and saddle-shaped arches) are the jaws and the alveolar process on the one hand, and the teeth on the other. The alveolar process is soft and yielding, while the teeth and jaws are comprised of hard, unyielding substance. The process adapts itself to the conformation of the teeth." *

The data of such studies as I have made are taken from the casts of the palates of one thousand idiots, all inmates of American Institutions for the Feeble-minded. I have also the casts of the palates of five hundred school children in American schools to compare with them. The casts were made several years ago, giving ample time to examine them at leisure.

The best classification is the one that covers the most cases, is the most definite, and the most easily understood. Talbot has given what he regards as such a classification, which is the following :—

1. V-shaped.
2. Partial V-shaped.
3. Semi-V-shaped.
4. Saddle-shaped.
5. Partial saddle-shaped.
6. Semi-saddle-shaped.

In my own classification I have not included Talbot's two latter varieties, for the reason that there were very few of them, and when they existed were usually in combination with a more marked variety of deformity.

While Talbot has spoken of his classification as one of "pathological palates," the one I present of idiots I should call "a classification of the palates of pathological individuals." This is as follows :—

1. V-shaped.
2. Partial V-shaped.
3. Semi-V-shaped.
4. Saddle-shaped.
5. Average, or U-shaped.

* *Op. cit.*, p. 401.

In a general classification some expression for what may be regarded as a fairly normal palate is necessary. Such researches as I have been able to make on skulls and casts, and the study of others' writings, have led me to the conclusion that the normal palate of the present day approximates to a broad, short *U* rather than to the more typical horse-shoe shape. I have therefore adopted the term "*U*-shaped."

The percentages I have found are as follows :—

TABLE I.

Classification of Palates of 1,000 Idiots.

V-shaped...	...	19	} 48.1
Partial V-shaped	...	24.8	
Semi-V-shaped	...	4.3	
Saddle-shaped	...	11	
Average, or U-shaped	...	40.9	

From this table it will be seen that about forty-one per cent. of idiots in American Institutions have palates which are of fairly good shape, and cannot be regarded as falling into any classification of pathological palates, if *shape* is to be the criterion.

The difficulty of making correct inferences from statistics can be graphically shown by the next two tables I present, which are arranged after the method of Talbot.

TABLE II.

Showing Varieties of Palates in Presumably Normal Individuals.
Collection of Drs. Sheppard and Cooke of Casts taken before
Correction of Irregularities of the Teeth.

No.	Normal.	Large jaw.	High vault.	V-shaped arch.	Partial V-shaped arch.	Saddle- shaped arch.	Small teeth.
212	22.1	5	5	16.5	42	19.3	0

TABLE III.

Showing Varieties of Palates in Presumably Normal School
Children over 12 years of age. Not from casts. (Dr. Talbot.)

No.	Normal.	Large jaw.	High vault.	V-shaped arch.	Partial V-shaped arch.	Saddle- shaped arch.	Small teeth.
1,000	78	1.9	5.6	1.1	6.1	3.3	3

In Table II. it will be seen there was an enormous percentage of deformities far in excess of that in Table III., and nearly 30 per cent. in excess of that figured in Table I. of idiots' palates. Table II. shows 42 per cent. of partial V-

shaped arches, which Table III. gives as only 6.1 per cent., and Table I. 24.8 per cent.

From these statistics it would appear that one class of the general community not only has many more deformities than another, but actually more than obtained among idiots ! The discrepancy in the first two sets of figures can somewhat be explained by the different methods of observation pursued. The statistics in Table II. were made from casts by myself at leisure, and with care. Those in Table III. were not made from casts, and therefore, though no doubt carefully compiled, were more liable to error. One might further explain the discrepancy by saying that the individuals serving as the basis of the figures in Table II. were exceptional cases, going to the dentists for the correction of known deformities, whereas, on the other hand, the school children represented average individuals in the community. If the former are assumed to be average, or normal individuals mentally and physically, on the whole, as I have every reason to suppose, why should not V-shaped and saddle-shaped arches be regarded as not infrequent at least in the general community ? Talbot has recently modified his opinions as presented in the above table, and finds a much larger percentage of deformed palates than there appears.

Such being the evidence in regard to what has been assumed to be the *abnormal* palate in the average member of the community, a few words further may be in order on the subject of the so-called "normal" palate in abnormal individuals. At present, as I have already suggested, I hold that we have no correct standard of the normal palate. We can say, if we please, that a certain kind of palate is *typical*, and so perhaps it may be, if our type is to be of an anatomical character, consistent with the perfect anatomical development of the savage of many centuries ago, for the palates of recent races, as far as I have examined them, are not perfect in this regard, but in my opinion we can do no more in the case of the civilised man of to-day, than to assume that in certain races, under certain conditions, palates of varying shapes are found, and accepting a wide range of shapes of palates as coming within normal limits, we can say : That those with the fewest defects within these limits will give us a fairly reliable average.

As bearing upon this subject, of what we are to infer from the shape of the palate, I will present the plan of

classification of Dr. Clouston, already alluded to in an earlier portion of this paper.

TABLE IV.

Frequency in Different Types of Palates in Idiots and Imbeciles (Clouston).

No.	Typical.	Neurotic.	Deformed.
169	11	28	61

To serve as a basis of comparison I will present a somewhat similar table of my own.

TABLE V.

Frequency of Different Types of Palates in Idiots.

No.	Average, or U-shaped.	Slightly deformed.	Much deformed.
1,000	40.9	40.1	19

As I have already said, I do not believe we are justified in using Clouston's expression of "typical;" and further, in my opinion, it has no clear, or well-defined, or logical connection with his "neurotic" or second class, which in turn appears to have no connection with either of the other classes. It is a mistake in dividing palates into three classes to make two on an anatomical basis which should be a demonstrable fact, and a third on a basis which is hardly physiological even. Furthermore, palates either fall within the limits of deformity or outside of them, as I believe has been suggested by Talbot, and all of Clouston's "neurotic" palates must have been either one thing or the other.

The results presented in the table compiled by myself are quite different from those of Clouston, showing a much larger percentage of average palates, fewer of his "neurotic" class, which I call the *slightly deformed*, and a very much smaller number of the third, or *much deformed* class. While acknowledging that my own figures, like those of Clouston, are an expression of my personal judgment, they were made wholly from casts, and I believe were carefully, impartially, and accurately compiled.

Assuming that the statistics presented above are correct, I arrive at the conclusion that not only do we find many slightly deformed palates in idiots, but also an important percentage of average or fairly good palates. Precisely as in a normal individual a deformed palate may not by itself be a sign of degeneracy, used in what must be regarded as its

proper sense, so in the feeble-minded, or idiotic individual, a palate up to the average is no indication that he is not degenerate. It is one of those rules working both ways.

Further it may be said in contravention of the position of Down that V-shaped palates are characteristic of idiocy, and even pathognomonic of the congenital form, that such a theory is disproven by the facts, which lead to the opposite conclusion, namely, that no particular kind of deformed palate is characteristic of idiocy.

The point already referred to above, but not adequately brought out in studying deformities of the palate in idiots, is the fact that in a not unimportant percentage of cases the infantile character persists after puberty. In my series of one thousand casts the infantile type was noted in approximately seven per cent. of individuals over twelve years of age, some of them being between twenty and thirty years of age. The teeth in these cases are generally small, occasionally some of the first set being retained, and are sometimes regular and sound. The palate is of normal shape, as far as its relations to itself are concerned, but in relation to the age and size of the individual it is deformed and aberrant, and quite as striking as a deformity, or an instance of arrested or delayed development, as a V or saddle-shaped palate. Notwithstanding, it receives no proper place in classifications, and would naturally be liable to be counted among those classified as normal. Perhaps few of us who are not dentists can be expected to judge of the development of the palate in relation to age, but I regard it as of considerable importance, and not to be forgotten in describing palatal deformities.

Talbot has repeatedly asserted, and I believe that it is generally true, that the palatal deformities do not to a great extent appear until the second teeth begin to come in, or not much before the eighth year.

In the series of casts already referred to of five hundred school children, all presumably strong, normal children, I find a variety of palatal shapes. The ages of the children range from six to fourteen. The prevailing shape is a rounding arch approximating to the horse shoe, with a rather flat and broad vault. The younger the subject, as a rule, the more noticeably flat is the roof, and the more regular the circular contour of the arch. The symmetry of the arch is often interfered with as soon as the second teeth begin to come in. We can pick out in the casts of these

children almost any of the *kinds* referred to in classification, though the *degree* of the deformity is less, for the palate retains its infantile character to some extent until the child is well in his teens. There are plenty of palates narrowing in front. There are others which are rounding anteriorly like a broad U, some of which will probably become V's, and others saddle-shaped, according as the cuspids or bicuspid come in last. It is easy to imagine that these U-shaped arches will not be long enough in their long diameter for the long diameter of the teeth, and only a little crowding of the central incisors will be necessary to turn the U into a V.

Then there are casts where the arch is circular on one side and slightly straighter on the other, where there is a very little pinching in at the bicuspid, and in some cases a widening out in front of the first molars. The lateral arch may be about normal on each side in relation to itself, yet larger or smaller than the other side. The palatal suture may be noticeably developed, the rugæ prominent. Some of the palates are twisted, one whole side being a little out of relation to the other.

These points and others can be observed on a careful study of the palates of these school children, which at a first glance we should be apt to pass as normal. We can see in some of them defects and irregularities which must later, in a developed state, appear as the various deformities which now figure as stigmata of degeneracy.

A specially interesting use to which these casts may be put is as a means of comparison or control for the study of the palates of idiot children of a similar age. It happened when I was rearranging my idiot casts that a considerable number of school children's palates were mixed up with them, and I found to my surprise that I could not always discriminate the palate of the idiot child between six and twelve, from that of the school child. There were the infantile characteristics already referred to in each kind, just as there were many departures from the strictly symmetrical circular outline of the arch. The teeth in the casts of the idiots were not always as good or as much developed, except in very exceptional cases where there were exceptionally large palates with too many teeth. A further fact I noticed in the palate of the idiot young children, that those *over* twelve, even up to eighteen years of age, often preserved the infantile characteristic of the palate already alluded to, so that quite a number could be placed with those of young

children below twelve years of age, and not appear out of place.

These observations of the palates of young children lead to the conclusion that, at least up to eight years of age, there are in a large proportion of cases no essential differences to be observed between the presumably normal and idiotic. So-called characteristics of shape and size which would serve to differentiate the former class from the latter are not sufficiently and definitely marked enough to be reliable for such a purpose.

The limits of this paper will not permit me to enter into a discussion of the question of why and how the development of the palate is arrested or retarded, or of the mechanical, or what I should call "dental explanation" of palatal deformities. These topics I must leave for future papers.

As far as the idiotic or feeble-minded are concerned, I believe the deformed palate to be only one of an indefinite number of indications of imperfect anatomical development occurring to a marked or very slight degree as hereditary and environmental causes may determine. It is not that the individual is idiotic or feeble-minded that he has the imperfect palate, but because circumstances have kept him in a lower plane of evolution than his normal brother, and he never grows to manhood, or the completed fulness of life.

Conclusions.

The most important of these are as follows:—

1. Two-fifths of the palates of idiots are of fairly good shape.
2. Palates of normal individuals may be deformed.
3. In the idiot it is a difference in degree, and not in kind.
4. In either case it shows irregular development anatomically.
5. Palates of average children and idiots under eight years of age probably do not in the majority of cases markedly differ.
6. There is no form of palate peculiar to idiocy.
7. The statement that a V-shaped or other variety of palate is a "stigma of degeneracy" remains to be proved.

Discussion.

The PRESIDENT confessed that he was not prepared to discard the condition of the palate as a valid sign of degeneracy. He might indeed accept all that had been said by way of mechanical explanation, but the very mechanical condition and those very irregularities were due, in some cases at least, to degeneracy. He was not prepared to defend the classifications of palates that had been made; he did not accept all that had been said on the subject; but

he had carefully examined a great many palates and a great many people, and had come to greatly modify what he had learned from books. He had found that great caution was necessary on the subject. It had fallen to his lot to find a difference in the palate of *sets* of individuals coming (as lunatics) from different parts of England; and the average was distinctly different in regard to districts. They must therefore take into consideration not only the race, but the parts of the country from which the patients came. It seemed to him, however, that the matter could never be settled unless they had certain kinds of observations made,—observations upon large numbers of persons known to be mentally defective compared with an equal number of normal individuals taken from the same race, from the same localities, following the same occupations and at the same ages. He had seen numbers of idiots in whose palates he could trace nothing abnormal; but he found a certain relation between the condition of the palates in idiots and imbeciles (those presenting marked signs of degeneracy) and the shape of the cranium, especially the relation of the antero-posterior to the transverse diameter—a very important point to be taken into consideration.

Dr. FLETCHER BEACH said he had examined 700 children at Darenth. His conclusions had been very different from those of Dr. Clouston, in fact, they were almost the same as those of Dr. Channing, the so-called neurotic cases being rather 61 per cent. than 28, and the deformed cases rather 28 than 61. He accounted for this by the fact that a large number came from the lowest parts and a large number from the best parts of London; and, on the whole, rather a larger number of imbeciles than idiots. He suspected that normal individuals had quite as bad palates as abnormal. It had been his practice in hospital to examine the palates of nervous children, and he had there also found the neurotic palate in excess rather than the deformed. The investigations of Dr. Warner showed that there were a certain number of neurotic and a certain number of deformed palates, but not so large a number as might have been expected. There were more defective palates in the males than the females. Of the remote causes to which Dr. Channing had referred that of evolution must certainly be taken into consideration. Long years ago savages existed on roots and very often tore their meat to pieces. They would therefore require considerably more power and stronger muscles to move the jaws than most people did at present. Especially in highly evolved classes of society, where food was reduced to its most digestible state, very little mastication was required. The question of heredity must be considered rather differently, because it led to so many different ultimate results. Not merely did one find neurotic or deformed palates, but lobes of ears might be wanting, there might be under-hung jaws, large palpebral fissures, and so on, many of which were stigmata. He doubted whether they could take the palate alone as a sign of any significance unless they associated that sign with other stigmata. The changes in the palate after puberty he considered one of the most important points. He had been accustomed to conclude that if an idiot had a deformed palate the case was a congenital one; but if, as Dr. Channing said, palates changed after puberty, that opinion would have to be modified. In a case brought before the court where the individual was said to be unable to manage his own affairs, Dr. Down had declared him an idiot simply from the circumstance that he had a deformed palate.

Mr. BRISCOE disagreed with a theory of Dr. Clouston's, who said that anatomists could give him no information, and said that Mr. Tomes attached very little importance to the V-shaped or U-shaped palate. Dr. Briscoe thought that the canine tooth, as the key-stone of the arch, was very important. A dentist who had about a thousand specimens had not one deformed palate, although he had seen many deformed jaws.

Dr. WHITE thought that the investigation had been too narrow. It was not merely a question of the palate, but of the palate in conjunction with all the factors of cranial development. By confining themselves to one abnormality

they would miss the real matter which would guide them. The narrow palate seemed to him the result of abnormality or arrested development. If, as the investigation seemed to show, the great majority of children had U-shaped palates, were there many with V-shaped palates in the early years of life; and, if so, in conjunction with what deformities, and what was its significance? A consideration of that point might present the matter in a somewhat different light from Dr. Beach's statement of the matter.

Dr. CHANNING, in reply, said he had not examined very many young idiots. Only those in institutions had come within the scope of his investigation; but he found the proportion of U-shaped palates very large among young idiots. It was rather the exception, he thought, to find deformities until they had passed six or eight years of age. That the great majority of cases approximated to the U-shape was a moderately safe conclusion. He agreed that there must be some significance in the development of any organ or in the modification of size or shape of any portion of the body—he should say that with regard to the palate—but he wished to show that there was a good deal of exaggeration on the subject, and that they had gone too far in their conclusions, just as Lombroso had done in classifying insane criminals from a few observations. He did not think he had said that there were as many abnormal palates in normal individuals as in idiots. That would be going further than his warrant. In reply to Dr. Beach, Dr. Channing said that he would not diagnose a case as congenital because the idiot in question had a deformed palate.

On Post-Operative Insanity, with Notes of a Case occurring three weeks after Laparotomy. By J. CHRISTIAN SIMPSON, M.D., Tunbridge Wells.

The following case may serve the purpose of illustrating a few remarks on the subject of Post-Operative Insanity, which, perhaps, has not received as much attention in this country as might have been expected.

Mrs. L., aged 53, had always enjoyed good health until November, 1893, in which month she began to be troubled with gastric symptoms. These were unsuccessfully treated until the July following, when she asked me to attend her. The family history was unimportant. She was emaciated, and stated that she had been vomiting almost all her food for several months. Tongue coated; bowels constipated. It was evident that the stomach was greatly dilated, and there was pain on firm pressure in the epigastric and right hypochondriac regions. She was first put on a diet of dry food and a small allowance of malted milk; a mixture containing subnitrate of bismuth and hyposulphite of soda was administered. As the vomiting still continued rectal alimentation only was employed for several days. When food was again given by the mouth all the symptoms returned, so gastric lavage was now carried out daily, and, later, every second day. Hæmatemesis occurred, and on 21st August, 1894, she was seen by Mr. Skene Keith in consultation with me. As the emaciation was not extreme we decided to continue rectal enemata and gastric lavage

for some time longer. Mr. Keith again saw her on 11th October, and as there now appeared to be some ill-defined resistance in the right hypochondrium he performed an exploratory laparotomy. The stomach was found to be dilated to below the umbilicus, and a mass of tissue was felt apparently involving or dragging on the pylorus. No attempt at performing gastro-enterostomy was made on account of her bad general condition, but she made a rapid recovery from the operation, and has never been sick since the laparotomy was performed. There was soon marked diminution in the size of the stomach, but some pain on firm pressure in the epigastric region continued.

Twenty-four days after the operation some domestic affairs upset her, and by 9 p.m. she was maniacal, smashing anything she could get hold of. She refused to go to bed, but wanted to go out, and would take no food; her strength was extraordinary. Next morning 125th of a grain of duboisine was injected hypodermically; in a short time she went to bed, and remained peaceful for several hours, though no sleep was induced. This was repeated at 3 p.m., but as no sleep resulted, at 9 p.m. one-third of a grain of morphia was injected. Next day she was still violent and excited, and the attack continued for four days, when she became convalescent, and on the 10th November had no recollection of the excitement, though she still felt her head queer and looked pale and haggard. In April, 1896, she informed me that she had never felt better in her life, and had had no return of the sickness, though the dietary still largely consisted of potatoes.

The occurrence of mental derangement after operation is too frequent to be merely a coincidence. In many cases there is no known hereditary nor acquired neurosis, while in others with a history of hereditary insanity serious operations may be performed without any manifestation of this untoward sequel.

In the first place I exclude operations on the cranium and also certain other known causes of mental disorder, such as anæsthetics, sepsis, uræmia, and other auto-intoxicants. At present I shall allude only to aseptic extra-cranial operations.

The *frequency* of this sequel varies considerably. Homans had only two cases in 1,000 laparatomies, which included 700 ovariectomies and hysterectomies. Werth had two cases in 228 abdominal operations. Schnabel had 12 in 186 ophthalmic operations, while in the Massachusetts Eye and Ear Infirmary only four became insane after 128 operations, though a few more were unstable, restless, and badly behaved at night. Denis, in his thesis, computes the frequency at 2.5 per cent., but this is evidently greatly in excess of

the average. Through the kindness of Professor Annandale I was permitted to examine the clinical records of cases in his wards in the Royal Infirmary, Edinburgh, dating from 1882 to 1894. About 5,500 operations of all kinds had been performed, and there were 10 cases which suffered from mental aberration apparently entirely due to the operation. In a series of nearly 100 cases operated on in my private practice during the past two years the case now reported was the only instance. One other became maniacal during the course of a pelvic cellulitis (*Journal of Mental Science*, July, 1895), but as there was no actual operation it is not included in this series. There were thus 11 distinct cases of mental disorder occurring as a sequel of surgical interference in about 5,600 cases of general surgery. This is a ratio of less than two per 1,000.

The *type* of post-operative insanity which is most usual may be broadly described as acute confusional insanity. But in many recorded cases the actual form of insanity is more definitely stated. Thus in the record of 163 cases which I have collected 67 are described as mania, 45 as melancholia, one as hypochondriasis, two as delusional insanity, 10 as dementia, eight as alcoholic, 24 as acute confusional and hallucinatory, 2 as nymphomania, and 4 as hysteria. It is therefore evident that almost any form of insanity may be a sequel of an operation, but that mania and melancholia are the two forms which are most frequent. After studying 186 cases, Sears remarks that the type in all instances was the acute confusional.

It is now quite decided that true post-operative insanity is entirely different in ætiology, onset, and course from the delirium which may appear after an accident or operation in an alcoholic subject. The latter is simply delirium tremens precipitated by the trauma.

The *age* at which this sequel is most frequent varies considerably. Sears found that in 67 per cent. of 80 cases the average age was 40 years, the actual age varying from 10 to 80. In 32 cases which occurred after ophthalmic operations, Frank-Hochwart found that 15 were of ages varying from 30 to 90, and these suffered from acute confusional insanity. Seven, merely termed "aged," were affected by simple confusion or dementia. In 29 cases of which I have notes the average age is 47·3 years, two being under 40, and the rest varying from 40 to 73. In 17 other cases which were certainly of septic origin the average age was 45·9, and of these six were under 40. Thus no doubt a most important

element is the age, as it may indicate the state of nervous exhaustion and cerebral malnutrition resulting either from atheroma, syphilitic or other diseased condition of the vessels, or from the more normal senile arterial changes.

The *sex*, and coincidentally the *Nature* of the *operation*, are also very important factors. This is shown by the fact that mental disorder is far more frequent after gynecological than after general or even ophthalmic surgery, but if gynecological work be excluded the preponderance of the female sex as sufferers in this direction disappears. Sears found that out of 167 cases 102 patients were women, but if strictly gynecological cases were excluded there was little difference in the distribution of sex affected. He also found that out of 41 cases the subjects of an operation on the eye only 16 were women, and in another series of 18 consecutive cases of insanity after ophthalmic operation 10 were men. In the above series of cases quoted by Sears, 60 were gynecological, 62 ophthalmic (mostly cataract), and 45 general operations. Kiernan found that of 186 cases 65 were gynecological and 35 were ophthalmic cases, and Le Dentu noted that in 68 cases 38 had had a gynecological operation performed. In 124 cases which I have noted 102 were females, and of these 95 were gynecological, two after other abdominal operations, four general surgical cases, and one an eye case. There were 18 males affected, three with hernia, one with hydrocele, two eye cases, three bladder cases, and the rest general surgical cases. It is notable that in these male cases four were directly and three indirectly connected with the peritoneum, a total of seven out of 18 cases, four of which were on the genito-urinary system. There is probably little doubt that if operations were performed as frequently on the male genital organs as on those of the female, there would be quite as large a proportion of cases of mental disorder after them as in women. This is evident from several cases of mania and dementia having been reported as a sequel to double castration performed with the hope of curing an enlarged prostate. This is all the more likely to be the case on account of the advanced age at which this operation is usually performed. Professor Englisch remarks that though no case of Whyte's died as a result of the operation, there were five who suffered from insanity and died at a later date. Unfortunately Dr. Fauld's experience is by no means so favourable, for he reports five cases that he is cognisant of who all died shortly

after the operation with acute mental symptoms, and Dr. Fleming has also reported another with a similar result.

It may also be observed that it is not only after a major operation that insanity may supervene, for several of the cases were, surgically speaking, trivial and minor cases.

Certain more personal matters in connection with the individual patient may now be considered as exciting or predisposing causes.

Hereditary tendency is, perhaps, not so marked as might have been supposed, for Sears found it noted in only 13 out of 60 cases. Probably more important than this actual gross hereditary predisposition is the personal habit of mind and body previous and subsequent to the operation. When this element was taken into consideration it was found that no less than 34 out of 74 cases had been previously "queer, eccentric, hysterical, or nervous." But even hereditary predisposition and bad personal history are sometimes insufficient to cause complete loss of mental equilibrium. This may be exemplified by mentioning the case of a patient of mine operated on by Dr. G. E. Keith. She was in poor condition, eccentric and taciturn, and also had relations mentally afflicted. Her disease was a rapidly-growing ovarian cyst, which weighed 28lbs. after removal. Her convalescence was uninterrupted by any mental sequel. It does not also inevitably follow that mental disorder will be a sequel of one operation because it had been present after a previous one. Ill reports an instance of a woman who had melancholia after an urethral operation, but was quite well after another kind of operation. Contrariwise, one of Le Dentu's cases had had puerperal mania, and was again affected after an operation. This same want of unison in sequelæ may be noted in puerperal insanity, and in the insanity after anæsthetics.

Alcoholism is certainly important as an acquired neurosis acting as a predisposing cause, not only of an attack of delirium tremens, which has been excluded in these particular cases, but also of actual insanity. There were 13 cases in the series reported by Sears in which this factor was present. In two it was a family failing, in 11 it was acquired.

A purely *Emotional* disturbance is sometimes sufficient to upset the mental stability, such as in a case reported by Ahsfeld, whose patient became insane after the introduction of a vaginal speculum. Similarly Billroth instanced two

cases that had had a rhinoplastic operation. They became morbidly sensitive, introspective, and melancholic, doubtless due in great part to their deformity and disfigurement.

Chronic Plumbism is mentioned by Vene as a possible predisposing cause. I have made inquiries of Dr. Oliver, of Newcastle, and Dr. Richards, late of Hanwell, but neither of these gentlemen could recollect such a sequel. They would be inclined to regard it rather in the light of a coincidence than a case of cause and effect. At the same time plumbism predisposes one to nervous explosions, and Régis believes that in such a case the operation may be the exciting cause of an acute plumbic mania, just as it may also precipitate an attack of delirium tremens. The intimate association of chronic plumbism with arterial and renal degeneration, over and above any actual nervous lesion, must also be taken into account in such a case. It might be well for all plumbic patients who require an operation to undergo when possible a course of medical treatment before having the operation performed.

As regards the occurrence of *Uræmia*, it is necessary to remember that the mere absence of albumen from the urine does not exclude the possibility of serious renal insufficiency. Wilson found that anæsthesia had an effect on this secretion, for he discovered casts after anæsthesia where they were previously absent, and it seemed to him probable that the anæsthetic might be able to provoke, determine, or aggravate an urinary insufficiency. It is therefore advisable in all cases, but more especially those in which the genito-urinary system is the site of operation, to carefully ascertain the amount of urea excreted in the 24 hours, in addition to the testing for the presence of albumen.

There is also the actual *injury done* to various very sensitive and sympathetic structures and organs, such as the peritoneum, and in some cases the actual loss of an organ, secretive or sensory, such as the ovary, thyroid, or eye. Frank-Hochwart gives the following reasons to account for the occurrence of mental disorder more frequently after ophthalmic than after general surgical cases:—(1.) Numerous nerves connect the eye and brain, and lesion of the eye alone occasionally produces psychical affection. (2.) Irritation of any sensory organ is reckoned a possible cause of insanity. (3.) Predisposition due to the depression consequent on the blindness. (4.) Advanced age at which operations for cataract are often performed, though instances of similar

disturbance in younger patients have also been recorded. (5.) Darkness cure is depressing. Some persons get hallucinations on merely closing the eyes, and the longer the darkness the greater the predisposition, though mental disorder may follow operation when no darkness was employed, and even in cases when darkness was used and no operation performed.

The absorption of certain *Antiseptics* has occasionally resulted in the appearance of delirium or mania after operation, and chief among these are carbolic acid and iodoform. Actual poisoning by absorption of carbolic acid from the wound is very rare, and the symptoms are not typical of true post-operative delirium, for carbolic acid acts as a narcotic, chiefly affecting the basal ganglia, the patient dying comatose. Hamilton described such a case in 1873, that of a child, which proved fatal. On the whole this is not an important element, but in the case of iodoform it is somewhat different. This substance is a chemical agent, the composition of which is similar to that of chloroform. It is undoubtedly absorbed in some cases, and in these gives rise to a more or less defined train of mental and bodily symptoms. There is in such cases a taste and smell of the drug in the mouth, coryza, languor, and headache, all of which may be somewhat masked by a mild delirium. In others the delirium is more acute and incoherent, with no rise of temperature, only a dirty, dry tongue. This may appear as soon as absorption seems to have taken place, or not for some little time, in which case it has probably been accumulating. In these latter cases the mental symptoms are more usually tinged with depression. Professor Chiene informs me that he has had two cases of iodoform insanity after operation, and Dr. Clouston considers the excessive incoherency as very typical. As regards the frequency of this as a cause of post-operative insanity, we know from Le Dentu and Werth that in all their cases this antiseptic was most sparingly used, if at all. As a rule in ordinary laparotomy cases it is very little used, but at the same time it is subsequent to those cases that this insanity is most frequent.

Ball noted one case in which he ascribed the mental disorder to the *Morphia*, but as a rule this can be readily excluded, though it might be of grave import if combined with a condition of renal inadequacy.

Acute Cerebral Anæmia from hæmorrhage may likewise predispose the patient, also certain *Constitutional* states,

such as the gouty diathesis, the presence of marked atheroma and other arterial degenerations, which all tend to cerebral malnutrition and consequent imperfect stability of the nervous system.

Lastly the patient may have a *Latent Lesion*, which produces no symptoms until something unusual happens such as an accident, operation or alcoholism. The following case occurred in Mr. Annandale's hospital practice. A man had a compound comminuted fracture of the skull, which was accompanied by aphasia. This apparently passed off, but three weeks later the patient indulged in alcohol and was readmitted suffering from pneumonia, and his aphasia was as marked as ever. He was subsequently discharged with no trace of it. Thus a patient may have some weak point in his cerebrum, unknown and unknowable, until it makes itself apparent as an epiphenomenon in such instances. This has also been demonstrated in the lower animals.

There seems to be considerable variation in the time of the *Inception* of the mental symptoms, and also in the mode of their developement. In some instances it creeps on gradually as in a puerperal case, and then suddenly manifests itself, while in other cases it appears suddenly with hardly any warning. In the collection of sixty-eight cases by Vene, which included Le Dentu's, the average date of accession was from the second to the fifth day. In 20 cases noted by Denis, only two were delirious immediately after the operation, and in seven cases observed by Dupuytren only one was sudden in its onset. Eillebrown had three patients in whom insanity did not appear until from three to four months after the operation. In Werth's six cases, two occurred after complete recovery from the operation, and two others not until from two to three weeks after the same kind of operation. In 20 cases of my own collecting, there were 13 in whom mental symptoms developed within 16 days, but the average day was the fourth; taking all the cases, which include one which did not appear until six weeks, one at a month, and two at three weeks and over, the average day of the onset was the eleventh. The same observation which is notable in puerperal and post-febrile insanities, is evident in these cases, namely, that the majority of them which begin within a fortnight are acute confusional mania, while those which develop at a later date are of a melancholic or demented

type rather than maniacal. In 86 cases collected by Sears 50 showed symptoms in the first three days, 15 between the 4th and 7th, 14 between the 8th and 14th, four between the 15th and 28th, and three in the second month after operation. These dates are similar to mine, though they are on a larger scale. It is also worthy of note that though the fourth day after the operation was the average date, in a certain number of cases, not necessarily abdominal ones, the insanity did not appear until after the wound had healed, and even in the great majority of abdominal cases there is practically no wound by the fourth day. As regards the possible influence of the anæsthetic in causing this mental state, it is to be expected that if such were the case the symptoms would appear soon after recovering from the anæsthesia or within 24 hours. Savage, however, says that though some cases of chloroform mania develop at once, others do not do so for hours or even days after, and that a fair number exhibit symptoms within a week, either in the direction of marked excitement or unusual depression, and this may be preceded from the first by irritability. It is thus difficult to draw a hard and fast time limit dividing these two classes of cases.

Considerable variation is found in the *duration* and *termination* of post-operative insanity. Vene reports that of his 68 cases, five were incurable or chronic, having then lasted one or more years, 13 were of one to two months' duration, 33 less than one month, six an unknown time, but not fatal, and 11 were fatal. He is therefore of opinion that post-operative delirium is sometimes fatal, rarely chronic, and mostly benign. Sears found that of 91 cases, 54, or 60 per cent. recovered, 21 died, and 16 remained insane. Krafft-Ebing estimates the recovery-rate at 70 per cent., which closely resembles the statistics of puerperal mania. In 15 cases of which I have accurate notes on this point, 10 had an average duration of 11 days, two lasted for two months, one for eight months, and two were more chronic. There were two fatal cases, one on the seventh day after hysterectomy, reported by Swain, and one 28 days after suprapubic cystotomy by Annandale. In five others the duration was not accurately mentioned, but evidently they were not fatal. The actual age does not seem to have so much influence on the recovery-rate as the sex, or rather perhaps the nature of the operation, for Sears found that out of 25 males, 22 recovered, two died, and one remained insane, while out of 64 females, 22 recovered, 17 died, and 15 re-

mained insane. If the case does not terminate fatally, the acute type has a better percentage rate of recovery, and does so sooner than those more tardy in developing, which are as a rule of longer duration and more apt to drift into a chronic state. It may be noted also that the insanity does not by any means always subside on the healing of the wound in those cases in which it appeared before cicatrization was complete, and this may be compared with the fact previously mentioned, that mental symptoms may appear after cicatrization is complete. There seems to be no interference with the trophic functions, as the wound almost invariably proceeds satisfactorily, and the absence of any marked increase of the temperature or the pulse rate, such as occurs in cases of septic origin, is one of the distinguishing features of this particular form of acute confusional insanity.

To summarise, in 26 cases of which I have notes, 17 were subjects of mania, only two of these developed after the second week, the average age was 47, nine were females and eight were males; one of the females died. Four were melancholics, one a depressed general paralytic, and four were demented. It seems to me preferable to consider the four melancholia and one general paralytic cases separately from the four dementia cases. In the former the symptoms commenced after a period of two weeks from the operation, the average age was only 41, and the ratio of sexes affected was the converse of the maniacal cases, three being males and two females. One male and one female died. The average age of the dementia cases was 67, the sexes were equally affected and one male died. This greater average age seems to be sufficient to differentiate the more ordinary depressed condition from that of the demented, for while in the former the more slowly developing and slighter mental dissolution appeared at an age less than that of the more rapid and greater dissolution of mania, in dementia, where the greatest dissolution had taken place, the patients were 20 years older than the average age of the maniacal cases, and were presumably the subjects of far more advanced degeneration, hence they more readily succumbed to any nervous or bodily strain which happened to be placed on them.

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On Mental Auto-infection. By H. KORNFIELD, M.D., Corresponding Member of the Medico-Psychological Association, Grottkau, Silesia.

In popular estimation there is no surer relief from itching than by scratching. The lower classes have no better remedy for anger than cursing. The more educated indulge in reproaches and complaints often referring to other causes than the immediate source of irritation. Experience, however, has taught us that, in only too many instances, the practices thus indulged in are positively deleterious; and that

abnormal feeling is further aggravated by giving way to these impulses of reflex action. Still, there is a momentary relief, and a feeling of comfort which in a great number of cases is all that can be expected by the physician.

Goldscheider believes that the effect of scratching is to suppress the sensation of tickling, by exciting a stronger sensation. I believe that he is wrong, however, in supposing that itching is not a sensation apart, but only a more lasting sensation of tickling. That is contrary to the common experience that every pleasant sensation is only pleasant in the first inception.

I do not here attempt an explanation of the psychological basis of these facts of common experience, but the analogy of similar observations in regard to mental and bodily conditions aids in the consideration of the origin of several forms of insanity. In a recent number of this Journal there is evidence of an increasing interest in the relations of bodily and mental conditions of disease; and, although there are many references to this subject in the standard works on Psychiatry, it may be useful to indicate what has been written and to communicate my recent conclusions.

Taking for granted that every psychical change calls up or implies a distinct bodily condition, it follows that abnormal psychical conditions are accompanied by anomalous somatic conditions. There is no need to prove that powerful passion may provoke derangement of the liver or the heart. I therefore attach importance to the (1) degree, to the (2) duration, to the (3) intervals of mental disturbance. The monologue of Hamlet sets forth the varying causes of anguish which may drive a man out of his mind. We may picture a case in which passion is replaced by bodily disease, or we may consider the effects of alcohol acting as a poison. The very word *intoxicated* explains my meaning. Jaundice may be caused by improper food or by anger—either acts in a toxic way. It is certain that a man may be inebriated by pride, or fall into insanity by brooding over real or imagined wrongs. The effect of the poison depends upon the three points above stated.

The most conspicuous effects of what I call mental auto-intoxication are found among the querulants. When the belief of having been wronged is fixed in the mind, every misfortune, every little trouble is brought into relation with the wrong and (even more markedly) with the wrongdoer. Now, when the link between bodily disease and abnormal

mentalisation is forged, the laws of association come into play and further connections and bonds are formed all tending in the same direction. Untoward circumstances requiring a hard struggle for a livelihood, disappointments without apparent cause, a certain disposition to sentimentality, some narrowness of mind unite in preventing a right estimation of the wrongs suffered and the proper relations of undoubted misfortunes. These factors are especially favoured by the occurrence of real bodily disease following mental disturbance—*e.g.*, when anger has caused disorder of the bowels, which has been aggravated by other causes unknown to the patient. Further, any periodicity of the bodily disturbance aggravates the false reasoning, and creates a true *circulus vitiosus*; and, should the evil combination continue, general mental enfeeblement ensues; and in the end the patient becomes completely unable to correct false reasoning.

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(To be continued.)

CLINICAL NOTES AND CASES.

A case of Melancholia, with Lipoma, apparently becoming demented. Operation and Recovery. By FREDERIC P. HEARDER, M.B., C.M., Assistant Medical Officer, West Riding Asylum, Wakefield.

W. B., male, æt. 50, admitted to the West Riding Asylum in November, 1894; first attack of three months' duration. Family history good. He had been a hard-working, sober, and thrifty man, the nature of his calling exposing him much to the weather. A tumour had grown during 20 years on his arm, and, for some

time previous to admission, had caused sleeplessness from pain, and had become a constant source of worry. Delusions of persecution with aural hallucinations gradually developed, he became irritable, violent, and frequently attempted to appear in public in a state of nudity.

On admission his *appearance* was suggestive of dementia, expression stolid, memory for recent events much impaired, *e.g.*, on the day following admission he could not remember when he had come to the asylum, or which of his relations had accompanied him. Many simple questions he answered with "Nay! I don't know," and in attempting to answer others became incoherent. He several times put his hand up to the left side of his head complaining, "It's all in my head." He had hallucinations of sight and hearing.

Physical Condition.—He had a pendulous lipoma, growing from the posterior surface of his right upper arm, which measured 12 in. in length by 6 in. through its greatest breadth, the pedicle being 7 in. in length. The skin over the lower free end had ulcerated from pressure. Reflexes were normal. Cardiac deep dulness was increased, arteries slightly fibrous, pulse 100. He had slight dulness at the right apex, with jerky inspiration and prolonged expiration. Urine acid, sp. gr. 1017. No albumen.

On admission I asked his son for permission to remove the tumour, and was refused.

Two months later the ulcer at the lower end of the tumour was becoming foul in spite of frequent change of antiseptic dressings.

A month later there was an abscess at the lower end of the tumour, and pus increased to 10 oz. a day. Notwithstanding extra diet and tonics he was failing in strength, lost 14 lbs. in weight, and was apparently becoming more demented. Temperature hectic. He was too weak to be out of bed. There was much mental torpor, and he needed constant attention.

Having several times repeated my request to be allowed to remove the tumour, in vain, permission was now granted, and on 18th Feb., 1895, I removed the tumour under ordinary antiseptic precautions. On coming out of chloroform the patient became very restless. Trional grs. xv and a $\frac{1}{2}$ gr. morphia suppository were exhibited. His restlessness necessitated redressing the arm on the following morning, when there was found but slight blood and serous discharge; one stitch near the upper end of the incision had drawn through.

The wound continued healthy and healed well. The patient's appetite became ravenous. He became steadily brighter mentally and continued to improve till he left on a month's probation, and on 14th May, 1895, was finally discharged recovered.

At the end of February, 1896, the patient's progress was reported as satisfactory, bodily health good, at work every day.

The case is interesting, as the tumour produced insanity, and as the removal of the cause was followed by mental and bodily recovery, in a man beyond his prime, and specially as this recovery was from what appeared to be a state of advancing dementia.

Case of Cervical Caries involving Left Edge of Foramen Magnum and Condyle of Occiput, Left Supra Articular Surface of Atlas and Odontoid Process of Axis (posterior aspect.) By C. HETHERINGTON, M.D., District Asylum, Londonderry.*

E. O., æt. 33, admitted to Londonderry Asylum 7th November, 1890. Mental state, dementia. Bodily health and condition good except for occasional vomiting of large quantities of partly digested food.

For several months previous to his death patient had had rigidity of the trapezii muscles, but as there were no external local manifestations of disease, and as patient would never permit any internal examination of his throat, and could volunteer no information, his condition was considered to be one of ordinary stiff neck.

25th August, 1894.—Patient first complains of pain in the back of his neck and refuses all solid food.

1st September.—Apparently suffers great pain in back of neck on slightest movement, and almost cries out when it is touched. Has great difficulty in swallowing fluids. Morning and evening pyrexia, extensive inflammation with swelling at back of neck; no definite fluctuation. Deep-seated abscess suspected. This afternoon lost all power of left arm and leg.

2nd September.—Breathing hurried and shallow, profuse perspiration, great prostration. 1 p.m., died.

8th September.—*Autopsy*.—Confined to cranium and cervical spine. Undue prominence of spinous process of axis.

Brain.—Nothing found to account for left hemiplegia.

Cervical Spine.—A certain amount of swelling and inflammation with thickened tissues, and a layer of pus between upper cervical vertebræ and pharynx. Caries was discovered involving the left edge of the foramen magnum and condyle of occiput, left supra articular surface of atlas and odontoid process of axis (posterior aspect). The disease was confined to the anterior part and left side of the above-mentioned parts, and accounted for the left hemiplegia.

* Specimen and photographs shown, and notes read at the meeting of the Irish Division of the Medico-Psychological Association held at Londonderry August, 1896.

A Case of Prolonged Mental Stupor ending in Recovery. By
A. E. PATTERSON, M.D., Assistant Medical Officer, City
of London Asylum.

L. C., a commercial traveller, aged 30, single, admitted 2nd June, 1892. He had been found wandering about the City of London four days previously, and was taken to the Union Infirmary in a state of mental stupor, said to have been caused by the robbery of his watch and five pounds in money.

Parents dead; only brother died of phthisis. No hereditary predisposition to mental disease could be ascertained, and this was his first illness. He had indulged in sexual excess. On admission he was in a stuporose dazed condition, and would remain standing in one position with downcast head and half-closed eyes, would not answer questions or speak, and took no notice of his surroundings, but would put out his tongue and shake hands when requested to do so: his dress was very careless and slovenly, and he was quite passive, offering no resistance when moved. He was in fairly good bodily health, though thin, the heart and lungs were normal, pupils dilated and reacted sluggishly to light and accommodation: there was slight tremor of the facial muscles, and his body weight was 10st. 4lbs.

He continued very much in the above state for the first fortnight, but on June 17th refused food, and had to be fed by stomach tube; this was repeated on the 23rd, and continued thrice daily till July 6th, when he suddenly brightened up, and spoke for the first time since admission, saying in a low tone of voice that he was "getting better." Two days later he entered into conversation, and showed a marked improvement in every way until August 8th, when he became very depressed and again refused food, giving as his reason that he "did not think it necessary to eat." For the succeeding eight months his mental condition varied considerably, for at one time he was fairly cheerful and would take his food when spoon-fed, whilst at another he was depressed and refused all food. During this period the interrupted current and shower baths were given daily, but with little or no beneficial effect; he was abundantly fed with custards, eggs, cod-liver oil, etc., and did not lose weight.

Early in April, 1893, the stupor became more marked, so that he could no longer be roused from it, and now strongly resisted any effort to move him. About this time he on two occasions showed the impulsive suicidal tendency so commonly met with in stuporose melancholia by forcibly dashing himself upon the ground and against the wall, necessitating his being carefully watched night and day.

Gradually the stupor became so profound that he had to be kept in bed, as it was quite impossible to dress him owing to his stubborn resistance when any attempt was made to interfere with

him, and he now lay in a perfectly rigid state with arms firmly folded over chest, hands tightly clenched, wrists bent, and the whole body so rigidly fixed that he could be laid across two chairs, one of which supported his head and neck, the other his heels, in which position he would remain till lifted up. When placed in an upright posture he at once fell forwards or backwards as if he were a log of wood, making no attempt whatever to save himself; the plantar reflexes were entirely abolished, and there was considerable anæsthesia of the entire body surface. He remained in this state for about nine months, during which he was spoon-fed; his body weight was well maintained; special care was taken to prevent his catching cold, and his room was kept at a uniform temperature of 60°. Despite the heaviness of the stupor he gave an onlooker the impression that he was perfectly well aware of all that was being done for him, and hope of his ultimate recovery was never quite abandoned.

On January 6th, 1894, he suddenly awoke as if from a long sleep and ate food ravenously, voluntarily allowing himself to be fed, but refusing to feed himself. From this date he slowly improved, and gradually began to use his upper limbs, the lower still remaining rigid.

He was unable to articulate properly, but signified "yes" or "no" by a nod or shake of the head, and would whine when displeased. He now commenced to take notice of his surroundings, his attention being particularly attracted by any flower, and he eagerly read the contents of a French newspaper given to him.

At this time his aunt paid him a visit, and he at once recognised her, nodding his head and smiling to show his delight, and carried on a conversation with her by pointing out letters in a book which, when put together, formed words conveying his meaning. When shown the photograph of a friend whom he had last seen as a boy he pointed to a chair to show the height his friend then was, and stroked his beard to signify that he must now have grown to manhood. Whilst this mental improvement was taking place his body weight increased to 10st. 10lbs.

On September 16th he suddenly relapsed into a drowsy state, which rapidly increased in severity, and from the 2nd to the 29th of October feeding by stomach and nasal tube was again resorted to. He now sat all day long with head bent on chest; the eyes were partially closed, a sticky discharge exuding from them, and there was frequent clonic blinking; when the lids were opened the eyeballs rolled upwards. Once more the arms were firmly crossed over the chest, the wrists bent, and the hands clenched, whilst the lower limbs, which were cold and livid, were now firmly flexed, and could only be extended by the use of considerable force, at once returning to their former state when it was removed; the urine was occasionally retained, necessitating the use of the catheter.

Every endeavour was made to rouse him, and the sluggish circulation was stimulated by rubbing the body surface twice daily with rough towels, care being taken that the friction was not severe enough to injure the skin, and at the same time the muscles were massaged. The phosphates of iron, quinine, and strychnia were given along with alcoholic stimulants, and especial care was taken to keep the body warm. Under this treatment the joints became supple and could be extended with ease, and the lividity of the extremities considerably diminished. He now occasionally opened his eyes when he thought he was unobserved, and slowly replaced the blankets when any part of his body was purposely left without covering; he drew up his legs when the soles of his feet were tickled, and attempted to say "yes" when asked if he was better, but only succeeded in making an inarticulate sound, accompanied by a childish smile. For the next three months he showed no further improvement, and his body weight slightly diminished, but not to any great extent, and during this period he was regularly and abundantly fed by artificial means.

On December 25th, when about to feed him, I wished him "A Merry Christmas," when he suddenly opened his eyes, laughed, unclasped his tightly-clenched hands, held out his arms, and uttered a peculiar crowing sound of delight; he allowed himself to be spoon-fed, and amused himself by looking at a picture book.

Next day on first awakening from sleep he was somewhat stupid and dazed, mentally, but brightened up considerably during the forenoon, partook of food eagerly, clapped his hands when shown a Christmas card, shook me by the hand and attempted to place a sprig of holly in my coat; he drank some stout, holding the glass up to his mouth without assistance; he now used his spoon voluntarily when taking food, which he had never previously done, even during his temporary improvement at the beginning of the year.

On January 25th, 1895, the following note was made regarding him: "He now takes food well and voluntarily; sits up all day in bed reading books and looking at picture magazines, frequently drawing the attention of those around him to some humorous design or drawing. He is still unable to articulate, and signifies his desire as before by signs and by putting together letters to form words from printed matter; his habits are clean; average temperature in axilla 98° ; urine normal in quantity and of a somewhat high specific gravity, namely 1026, but there is no trace of sugar or albumin; plantar reflexes normal, knee jerks dulled."

On February 8th he was not so well mentally, and on the 10th his limbs became rigidly fixed and he refused to feed himself. He continued in a stuporose state for the next four months, during which he made three half-hearted attempts at self-destruction by throwing himself on the floor. This attack was neither so prolonged nor severe as the former ones.

In the beginning of June he commenced to speak, asking in a whisper if he might be allowed to see a cricket match, and a week later, in quite a natural tone of voice, requested permission to walk about the grounds. He now rose from his chair at my approach and walked by my side with the aid of a stick, although his gait was very slow and tottering. He sent a written request to be allowed to see the asylum engine-room, the writing of which was somewhat shaky, but quite distinct and the spelling correct.

The lower limbs were ordered to be rubbed daily with a stimulating liniment from which he derived much benefit, being speedily able to walk a considerable distance without support of any kind.

From this date he improved rapidly and steadily, showing himself to be a man of considerable culture; he was particularly fond of relating his experiences whilst travelling in Russia, and was always glad of an opportunity of conversing in French or German, both of which languages he spoke fluently, and he proved to be a very fair billiard player. His memory was remarkably good and he inquired as to the welfare of a patient who had been admitted on the same day as himself and who had long since left recovered; he gave a graphic account of a visit to this neighbourhood some years before his admission, and described several buildings from memory; he informed me he perfectly well remembered my daily visits, and repeated several of the remarks I had made in his presence, although, at the time of their utterance, he appeared to be in a state of deep stupor.

He was discharged recovered on December 14th, 1895, after a residence of upwards of three and a half years. His weight was 10st. 11lb., an increase of 7lbs. since admission.

The chief points of interest in the foregoing case are the sudden onset of so many relapses when the progress was otherwise satisfactory; the very marked muscular rigidity of the limbs and body generally; the clearness of the memory, during convalescence, for events which took place whilst the stupor was apparently most profound, and also before admission; and the ultimate complete recovery after such a lengthened illness.

OCCASIONAL NOTES OF THE QUARTER.

Pathology in Asylums.

We conceive that the ideal position of a pathologist is that in which his laboratory stands in direct communication with the wards of an institution—whether hospital or asylum—rendering intercourse with those engaged in clinical research easy, whilst he himself is absolutely free to

prosecute his special studies. To expect the laboratory worker to undertake clinical, *a fortiori*, administrative duties appears unphilosophical, an incongruity, an indication of imperfect appreciation of the value of time and specialised energy. Those who have experience of the exacting nature of research work will, we believe, at once concede that nothing can be more irritating nor more detrimental to good work than to have to relinquish temporarily some absorbing laboratory pursuit in order to engage in the work of the office or the wards. In medical circles in this country we are unfortunately only too familiar with this *mélange* of occupations, this professional polymorphism, in consequence of which our leading men are compelled to appear in various characters during the course of a day, exchanging frock-coat for laboratory blouse, and this again for lecturer's gown, throughout manifesting an adaptability truly astonishing. But such versatility, admirable in itself, is necessarily inconsistent with steady progress in special directions. It is therefore no wonder that in research work there is danger of lagging behind our continental *confrères*, labouring consistently in special departments of science, and less concerned with the commercial potentialities of professional life, as we know it.

If the system which we have ventured to designate as "ideal" is to be carried out in connection with asylums, it is necessary that appointments should be created of sufficient importance to attract and also to retain skilled workers. We believe that experience fully justifies the assertion that there can be no compromise between the ordinary plan of appointing a pathologist who is also assistant medical officer, and who is promoted in due course to duties wholly clinical, and that of creating a post of the above-mentioned kind; one calculated to satisfy the legitimate aspirations of the scientific worker, and offering a sphere worthy of his life-work. Under what may be termed the "compromise-plan" a young man is offered a salary, which, to him, fresh from the experiences of a student's modest *ménage*, may appear considerable. He enters on work with zest, but as time passes scientific ambition becomes tainted by commercial considerations and undermined by the promptings of social feeling. The spirit of unrest, fostered by the absence of worldly prospect, of finality, is incompatible with the execution of good laboratory work; results of scientific note are not to be expected

from the laboratory where the guiding spirit is constantly changing. Nor does experience justify us in counting upon pathological work of abiding value under the system in vogue in asylums, to which we have alluded; although exceptionally, as in the past, contributions of importance may be forthcoming. The work under such conditions is apt to be dilettante.

There remains, then, only the ideal plan. Indications are not wanting that its merits are beginning to receive the attention of the governing bodies of asylums. As a result of its adoption on a wide scale we shall be justified in anticipating more investigative work in those higher spheres of pathology and nerve-chemistry in which special knowledge and training are necessary. It is reasonable to believe that a license for animal experimentation would be granted to institutes of high standing—such as those we refer to—a privilege which, it may be confidently affirmed, would not be extended to lesser laboratories; yet it is precisely by the exercise of such privilege, by experimentation, in fact, that we should hope to progress in the investigation of various important points; for instance, the actions of poisons on nerve-cells, the bacterial origin of hæmorrhagic and other exudates in general paralysis, the “scavenger” function attributed to the spider-cells of the brain.

The subject of training for pathological work in asylum laboratories—and we now speak of these as at present constituted—merits consideration. The newly-qualified man who undertakes the duties of pathologist in an asylum, even though he be distinguished academically, will commonly discover that his knowledge of the methods of nerve-pathology, and of the pathological appearances of the nervous system, is rudimentary. He is in straits, rudderless, without a beacon. Guidance, it may well be, is not forthcoming; for the subject is still new, and receives but a limited degree of attention at asylums, and his seniors at the institution are not often in a position to be, in this matter, his preceptors. This difficulty would be in a considerable measure removed if the system of receiving resident qualified clinical assistants in asylums (beginning at the larger ones, with greater facilities) were more commonly adopted. Even if a small honorarium prove necessary, in order to attract such assistants—a contingency by no means improbable in these days of lengthened medical curriculum—the system would be commendable. Such clinical assistants,

whilst receiving ward-instruction, would also be trained in nerve-pathology, and from amongst such men pathologists would be obtainable, adequately equipped for the special work desired of them. The economy in time would be great; instead of spending the first eighteen months or so of his appointment in learning his duties, the pathologist would, shortly after undertaking the latter, be able to apply himself to some special investigation.

A Scottish Proposal.

Since the preceding paragraphs were penned certain proposals have been made in Scotland which augur well for the future. There is, in fact, at present a movement on foot for the appointment of a joint Research Pathologist, who will be resident in Edinburgh, at the service of the Scottish asylums associated for this purpose. As these are under different governing bodies, and have different constitutions, there may be some difficulty in bringing the scheme to a successful issue; but, with the lead given by the London County Council, it is to be hoped that the difficulty will not prove insuperable. The problem cannot be solved without the provision of a work-room, and negotiations are now in progress with the Laboratory Committee of the Royal College of Physicians to secure, if possible, accommodation in their splendid new laboratory, which has been recently opened at a cost of some £10,000.

It is thought that mental pathology would thus be brought into closer touch with general pathological, physiological and neurological work than hitherto. As the draft scheme stands at present it is proposed that the duties of the pathologist should be:—(1). To examine material sent from the associated asylums and to furnish reports, with microscopic specimens. (2). To carry on original researches upon the pathology of insanity. (3). To give, when required, instruction (free of charge) to the members of the medical staffs of the associated asylums, in the pathology of mental diseases and in laboratory methods. (4). To assist, if required, the medical staffs of these asylums in pathological researches as follows:—*a.* By arranging for collection of special material for a particular investigation from the various asylums. *b.* By advising as to the best histological methods to employ in particular instances. *c.* By

affording information as to work already done upon subjects in regard to which investigation is contemplated, and by assisting in the matter of literature references. *d.* By suggesting subjects of research. *e.* By providing sets of microscopic specimens illustrating normal histology and typical lesions, for the associated asylums. *f.* By visiting the associated asylums for the purpose of advising as to pathological work. It is recognised that the histological methods required for the study of the nervous system are now so complicated and special that no young graduate can do effective pathological work without special experience and special training. Assistant Medical Officers cannot, as a rule, devote the long time and undivided attention required for modern pathological investigations. A skilled referee is also needed to explain the true meaning of facts observed. It is not intended that pathological research shall be discouraged in the various asylums. On the contrary, it is thought that this scheme will stimulate such research, and guide it into right lines. The present time is exceptionally favourable for such a movement, as Dr. Ford Robertson is willing to take up this important work, and his recent researches commend him as a competent and trustworthy authority. It seems but just, as well as expedient, that the man who exclusively devotes himself to the pathology of mental diseases should look for promotion as well as the assistant medical officer who devotes himself to treatment. No doubt the movement thus initiated will rapidly gather in strength and momentum, and we wish it every success.

Independent Criticism upon Histological Appearances in the Brains of the Insane.

It is a trite observation that in these days nothing is sacred. The remorseless spirit of scepticism hovers over an expiring century, a merciless "Zeitgeist." It was not to be supposed that the all-pervading scepticism, having brooded over the more momentous questions of the hour, would leave untouched those which, while undeniably of great consequence, still are of less general interest. Amongst these is the question of the pathology of insanity. It must be allowed that criticism has neither tarried long nor chosen its moment inopportunately. For it is still but re-

cently that attempts have been made to establish a histological basis for the insanities. It is only now that the superstructure begins to expose itself to the shafts of the critic. The author of a critical paper, bearing upon this subject, in the 4th volume of the *Edinburgh Hospital Reports*,* may therefore be said to take the field betimes. The article is concerned with the inquiry as to how far the microscopical changes found in the brains of the insane are to be correlated with the mental disorder; and is likewise a contribution towards the formation of a reference-standard of the average appearances to be observed in brains of persons dying from general diseases, and who have never been insane. In an examination of the brains in fifty such cases—the cells alone, however, are dealt with in this paper—by the fresh method of Bevan Lewis, it was exceptional to find appearances in accordance with preconceived notions of health. The conditions noted were, in fact, the same, not only in kind (especially pigmentary changes and vacuolation) but also in intensity and in frequency of occurrence, as those met with in insanity, with the exception of general paralysis. It is argued that the most natural explanation of these cell-changes is that they are secondary to disease elsewhere, especially kidney disease. And we are reminded that chronic nephritis is abnormally frequent amongst the insane. Further, that disease in organs other than the brain may well account for minute changes in the cerebral tissues in cases of insanity, and it does not follow that such changes are to be correlated with the mental symptoms.

Contributions of this nature—extra-asylum experiences, by which he may orientate himself—cannot fail to be of great service to the asylum pathologist. On behalf of the latter it may be affirmed that he has awaited with interest such outside criticism. In order to furnish the alienist with adequate histological criteria, it is necessary that comprehensive microscopical investigations of the brain in sane persons should be made by all available methods, dealing not only with cells but with all the cerebral tissues. We require, in the first place, to learn whether the histological changes found in the brains of the insane are more intense and more frequent than are any similar changes which may occur in the brains of the sane. Should such comparatively gross changes as vacuolation and pigmentation of cells

* R. Hutchison, "Degenerative Changes in the Brain Cells of the Non-Insane."

(changes similar in kind to those occurring in insane brains) be shown to occur quite commonly outside of mental disorder, the demonstration would scarcely excite surprise. Even with respect to such changes the inquiry would be raised as to where, precisely, in what parts of the cerebral hemisphere, and in what cells or layers of cells they occur. But we shall be concerned with much more than these more obvious changes of cells, which are probably only end-changes. We shall expect *pari passu* with improvements in methods, comparative investigations in sane and insane, regarding the intimate structure of the nerve-cell and the state of cell processes; the condition of the neuroglia, especially the spider-cells; the state and disposition of blood- and lymph-channels. And, leaving mere structure, the question of chemical composition will need a place in the comparative investigation, an assertion for which we need no better argument than the recent work upon the chemical composition of the brain by Gutnikov.* And what are we to say of bacteriological investigation? Taking two brains, the one of a sane person dead of chronic nephritis, the other of a case of acute delirious mania, of puerperal insanity, or—we make bold to add—of general paralysis, dying after a series of “congestive” seizures, the pathologist may say “both show pigmentary degeneration, vacuoles; the only difference is a condition of ‘cloudy swelling’ of the cells of the lunatic’s brain, a congestion of vessels, and a diffused staining of neuroglia in the latter.” But until such cases receive proper bacteriological investigation we shall not to-day be content to believe that the “only difference” has been demonstrated.

Housing the Insane.

The supplement to the 50th Report of the Commissioners in Lunacy contains the plans of six new asylums, providing accommodation for nearly five thousand five hundred insane persons—London County building at Bexley Heath for 2,000, Lancashire for 2,000 (chronics) at Winwick, Stafford for 600 at Chedderton, West Sussex for 600 near Chichester, and Middlesbrough for 250.

The multiplication of asylums is so rapid, their cost so great, and their import so threatening that the question

* *Allgem. Zeitschr. f. Psychiatrie*, 53 B., 2 H., 1896.

naturally suggests itself, is there no other way? Is it unavoidable that the great bulk of those suffering from mental disability must be housed in big institutions? If not, how else can they be provided for, and in what relative numbers?

Answers to these questions from an authoritative source are urgently needed to assist those upon whom the responsibility falls of providing for the increase of the insane, and certainly no body of men has greater knowledge or experience of this subject than the members of this Association.

The views of the members of this Association, whether individually or collectively expressed, should certainly be available for those needing information or guidance, and the Association would be only fulfilling a duty to the community in discussing, and, if possible, formulating its success on this question.

The London County Council has appointed a committee to inquire and report on this subject, so that the simultaneous consideration we have suggested would not be inopportune.

Suicides of "Unsound Mind."

Much interest attaches to the Parliamentary return* of the number of persons who committed suicide in England, Wales, and Ireland during the years 1892-3-4-5, not being inmates of asylums, etc., but who were found to have been insane by a coroner's jury.

The total numbers were: For 1892, 2,472; 1893, 2,542; 1894, 2,681; 1895, 2,764. The increase in the four years was 292, or rather over eleven per cent.

Several of the coroners furnishing the returns point out that this finding is based solely on the fact that the individual committed suicide, no other evidence of insanity being adduced. The coroner for Manchester estimates that this is the case in 90 per cent. of such verdicts.

Evidence of prior insanity in such cases is often withheld, slurred over, not inquired for, or is in many instances unattainable, so that the finding may still be correct in a large proportion of instances, although conclusive proof may be so often absent.

Greater exactitude in the wording of verdicts is certainly

* 16th July, 1896.

very desirable, and the coroners could do much to this end. This might be accomplished by using, in a definite sense, findings with which juries are already familiar indefinitely. Thus "temporary insanity" might be applied to those cases in which there was no evidence beyond the suicidal act, whilst "when of unsound mind" might be used in cases in which prior insanity was recognised, and so forth.

The increase in the number of these verdicts disclosed in the report may be related to a change of habit on the part of juries, to more frequent suicide of definitely insane persons, or to a general increase of suicide; and of the operation of the latter cause there can be no doubt.

The Registrar-General's report shows that suicides in England have varied from 67 per million in 1875 to 80 in 1879, reaching 82 in 1886, falling to 77 in 1890, and being 85 in 1891, 88 in 1892, 87 for 1893, and 91 for 1894.

The increase of suicides in 1894 was about 7 per cent. on the number in 1891; the increase of verdicts bears the same proportion, and is therefore probably due to this cause and not to any change of views by the juries; but there are no returns for previous periods by which this relation can be verified.

The occurrence of suicide per million in England in groups of years has been :—

1858-60	1861-65	1866-70	1871-75	1876-80	1881-86	1886-90
65·3	65·2	66·4	66·	73·6	74·9	79·4

whilst 1891-4 as above recorded show a still more striking increase.

The stationary state of suicide in the eighteen years prior to 1876 evidenced by these figures is very remarkably contrasted with the rapid increase since. This increase, in spite of annual fluctuations, has been rapidly progressive, and its causes are worthy of the most serious consideration of our specialty.

Female suicides have increased from 34 per million in 1875 to 44 in 1894, a rise of ten per million, whilst the male suicides have advanced in the same period from 101 to 141, or forty per million; the increase being four times as great as that of the opposite sex.

An examination of the age tables for England shows that suicides in men especially exceed those of women in the later decades of life, and that the rate of increase has been greatest in these decades, so that on comparing the

differences in the rate per million in the decade 1881-90 with that of 1861-70 we find :—

Ages :	45	55	65	75 and upwards.
Women ..	+1	+5	+3	—17
Men ...	+46	+62	+120	+123

The contrast is striking, especially in those aged 75 years and upwards, in whom the difference is no less than 140 per million.

A large proportion of the increase is therefore in men, and in men upwards of 45 years of age.

Since 1861 there has not been any increase in the proportional number of persons living at an age over 55 years, such as was shown by the census returns of the preceding decades, so that the increase cannot be accounted for in this way. The sex comparison makes it obvious that women especially at the advanced periods of life are sheltered from the causes which affect men. The annual fluctuations, moreover, prove that these causes vary in intensity from year to year.

The homicidal side of the return shows that these were 26, 23, 20, and 26 in the four years under consideration; but as there are no previous returns of the number of homicides committed previous to suicide, no definite conclusion can be drawn.

Homicides in England have fallen progressively and rapidly from 18 per million in 1858-60 to 11 in 1886-90, and it would be interesting to learn from future returns whether these homicidal suicides were also diminishing. They are often the outcome of definite insanity, and their frequency would be to some extent a measure of the want of promptitude in treatment in the early stages of mental disorder, such as may arise from the legal difficulties of certification, etc.

The return emphasises the need for greater care in recording in verdicts the actual evidence of mental state in all cases of suicide, in place of the inaccurate and misleading findings that are at present recorded.

Insanity in Prisons.

Our prisons during the last year or two have been accused by various lay writers of producing an undue amount of insanity in the prisoners.

Undefined inhumane treatment and low diet have formed

one general basis of this alleged increase, the result having been assumed from a comparison with the statistics of the occurrence of insanity in the general population.

We have published papers by Drs. Baker and Pitcairn relative to this subject, and have also reprinted a *résumé* of the Report of the Departmental Committee on Prisons, in which last Dr. Bridges* has proved the exaggerated statistical fallacy of those writers, while admitting that the actual rate of recurring insanity is much in excess of the general population ; that this is so cannot be regarded as surprising.

Prisoners, by the fact of their imprisonment, prove their want of power to adapt themselves to their environment, and general observation demonstrates that this commonly extends beyond loss of control in relation to their fellow men to all their appetites and habits. In minds so ill-developed and ill-balanced, and often already depressed by anxiety arising from fear of detection in wrong-doing, depression must constantly follow imprisonment, from the sudden withdrawal of habitual excitation (mental or physical). This depression is often exaggerated by their low physical powers and by onanism.

Many of these socially defective persons oscillate between prisons and asylums, and the Commissioners in Lunacy in their 43rd Report draw attention to the fact that owing to the dangers of certification many lunatics are allowed to remain at large until, on the commission of some criminal act, they are sent to prison.

That imprisonment of such persons does not develop insanity in a much larger proportion than Dr. Bridges' statistics show is an astonishing fact, and suggests that the beneficial results of the healthful *régime* and withdrawal from excesses outweigh the opposing influences.

The allegations of inhumane treatment do not appear to have been advanced during the inquiry. The Departmental Committee only advocated in their Report one slight change in the dietary, and even this on mature consideration by the authorities has not been considered necessary.

Medical Officers of Prisons have been thoroughly vindicated from the attacks made upon them, and will, we trust, benefit largely by the changes which the Departmental Committee has recommended, to which attention was drawn in our July issue.

* Report of Departmental Committee on Prisons.

Beri-Beri in the Richmond Asylum.

The renewed outbreak of beri-beri in the Richmond Asylum at Dublin has led to a thorough investigation by independent experts of the conditions under which it has been redeveloped.

Dr. Patrick Manson, one of the experts thus called in, reports that the epidemic was certainly beri-beri, and that it originated, as it invariably does originate in temperate climates, from extreme overcrowding, associated with defective ventilation and dampness.

Sir Thornley Stoker fully confirms these views, adding saturated defiled soil and housing in wooden structures as aiding in the causation.

The female permanent hospital is taken by Sir Thornley Stoker in illustration; in this building seventeen patients slept on mattresses placed on the floor, sixty-three persons being crowded into accommodation which he estimated as suitable for twenty-five.

Dr. Manson recommended the abandonment of those rooms in which the flooring "is laid immediately on the damp soil," and Sir Thornley Stoker speaks of the floors as "poorly constructed, worn, and made of soft wood." "They are sponges to absorb infected material."

The infection of beri-beri, all authorities assert, especially lingers in wooden structures, which, as a result of the failure of all means of disinfection, have often needed to be destroyed.

From these facts it is easy to recognise that very sweeping changes will be required to free the Richmond Asylum from the periodical recurrence of this disease, probably in even more virulent forms.

The possibility of this being the case is shown by the fact that in the present outbreak seven of the nurses have been attacked, suggesting a more intense form of the disorder than in the previous epidemic when the sane were not affected.

Beri-beri, as Dr. Manson points out, is constantly being imported and seen by him at the Seamen's Hospital, etc., so that its effecting a lodgment under such favourable conditions for its cultivation as exist at the Richmond Asylum, is not a subject for any great surprise.

That a British Hospital for the Insane, at the close of the nineteenth century, should furnish such conditions for the

culture of disease, is a phenomenon that cannot but excite the utmost astonishment. It assuredly calls for prompt explanation and an equally prompt amendment.

The overcrowding and defects of structure were described six years ago by the Inspectors of Lunacy as "paralysing every effort to treat the insane." Yet since that report the overcrowding has increased rather than diminished, and we must conclude that the paralysis has continued and developed.

The responsibility for this scandal rests on the system on which Irish Asylums are administered rather than on the administrators.

The Board of Governors, who supervise the asylums, complain that they have no function to discharge in connection with the erection or enlargement of asylums.

The duty of providing the buildings rests with the Lord Lieutenant in Council, who is advised by a Board of Control (of which the Lunacy Inspectors are members), which carries out the directions received. The Board of Control also is probably not without its difficulties in obtaining the acceptance of its building schemes and the grant of funds.

Funds when granted can only be obtained from the Treasury through the medium of the Board of Works at a rate of interest ($3\frac{1}{2}$ per cent.) of which several Boards are complaining.

The cumbersome character of this administration is obvious, and the difficulties and delays in getting such creaky machinery to work can be easily imagined, as well as the irritation arising amongst the workers.

The remedy is, that the various bodies concerned, instead of spending their energies in allocating blame to each other, should unite in a vigorous representation to the Government of their difficulties and disadvantages and in formulating a scheme by which these may be obviated.

The Care and Training of the Feeble-minded.

We note with satisfaction the spread of efforts to improve the condition of the class of helpless and (if unassisted) hopeless young persons who, while not sufficiently imbecile to be certified as such and sent to an idiot asylum, are nevertheless so far defective in brain function—or, as Dr. Warner has called it, "wrong-brained"—as to need kindly guidance

and protection. This Journal has for years past* advocated the systematic training, apart from normal school-children, of those incapacitated by physical or mental defects from benefiting by the ordinary curriculum; and we have described the working of some of the Special Centres under the London School Board.† The difficulty has presented itself of finding teachers qualified for this special work, both for elementary schools and for teaching in families; and we are glad to find that a practical scheme of training has been inaugurated at the Froebel Educational Institute, West Kensington, where in addition to instruction in the Kindergarten system a course of lectures on "Points in the Training of Backward and Mentally Feeble Children," is being given by Dr. Shuttleworth.

The general interests of the mentally-feeble class are also being looked after by the recently-formed "National Association for the Welfare of the Feeble-minded," the object of which is to extend and systematise benevolent efforts to assist such cases, especially in the establishment of small working-homes. The Secretary of this Association is Miss Paul, 27, Percy Street, W.

As the result of the investigations into the conditions of 100,000 school-children carried on by a Committee of the British Medical Association and other scientific bodies, a new society for the scientific study of the mental and physical conditions of children (called the "Childhood Society") has been established for placing this work on a permanent basis, and Mr. Frank Haydon (55a, Welbeck Street) has been appointed Secretary.

Mental Diseases in the New Nomenclature.

The *Nomenclature of Diseases* recently published by the Royal College of Physicians of London reminds us of the attempted revision by a Committee of the Medico-Psychological Association in 1892, when their report was not adopted. At that time Dr. Savage suggested that the Association should wait till this third edition had been presented to the medical profession, and then reconsider the matter. It seems to us that there are valid grounds for acting on this suggestion; for, although this section of mental diseases has been greatly improved, in the present as compared with the

* See *Journal of Mental Science*, Vol. xxxiv., p. 80; Vol. xxxiii., p. 552.

† *Journal of Mental Science*, Vol. xxxix., p. 553, etc.

preceding issue, both in simplicity and system, yet consideration of the nomenclature now prescribed will cause many to conclude that there is still room for amendment.

Statistical registration, as the original Committee on Nomenclature thoroughly recognised, has for its main object the revealing of the causes of disease. This seems to have been lost sight of to some extent in the present list, in grouping all cases of arrested mental development (with the exception of cretinism) under the term "idiocy," and in collecting all the insanities occurring during pregnancy, parturition, and lactation under "puerperal."

The factors of the different forms of mental disease are wanting in the systematic order or the causational grouping which would render them readily available in a statistical consideration of the action of the environment in producing mental disease from year to year.

Detailed criticism would be ungracious in regard to what is really a great advance on the previous edition, and in consideration of the fact that the Association stands committed to formulate the nomenclature which it has so long held in abeyance. We do not require, however, to read further than the first elucidative paragraph (page 39), to stop convinced that some alteration is required: "The *cause* of mania . . . should be returned according to the following list:—*a*. Delirious; *b*. Hysterical; *c*. Puerperal; *d*. Epileptic; and so on"—as who should classify horses, whirlwinds, blacksmiths and stepping-stones! We hope that Dr. Savage will give notice of motion at the next Annual Meeting for reconsideration of this difficult problem, for he, indeed, has incurred some degree of responsibility in advising both the College and the Association.

PART II.—REVIEWS.

The Fiftieth Report of the Commissioners in Lunacy, England, 17th July, 1896.

Perhaps the most interesting item contained in the fiftieth Report of the Commissioners in Lunacy is that in which a promise is conveyed that a separate statement will be issued dealing with that annually disputed question, the increase of insanity in the community. The Commissioners certainly have the best opportunities for arriving at a decision approximating to the truth, and we await this Report with

pleasure, trusting however that the basis of calculation and the deductions from the statistical tables which will be supplied will present a less fallacious estimate than that to which we are accustomed year by year in these annual Reports—statistical errors to which we specifically drew attention last year, and which we trust will be expunged from what is otherwise an exceedingly valuable and instructive production.

Another remark which will be welcomed by those engaged in the care of the insane is that wherein the Commissioners express the intention of giving in a separate supplement reduced plans of proposed asylums, &c., which will show the nature of the arrangements which have most recently been approved. We are all willing to learn and anxious to be informed of the latest architectural views of the authorities.

Before proceeding to a review of the general Report it would be well to draw attention to the remarks made by the Commissioners with reference to the 4s. grant, now made towards the maintenance of pauper lunatics in asylums, to lunatics in workhouses. Embodied in their report to the Local Government Board they express their favourable view of a limited and carefully guarded extension of this grant in aid. "The 4s. grant," they say, "for the patient while in the asylum, and its loss on his removal to the workhouse, has no doubt largely influenced the action of Boards of Guardians in the matter, and it is not improbable that the suggested extension of the grant would be a sufficient inducement to make such provision of necessary accommodation in workhouses as would admit of a considerable transfer of suitable cases from asylums. Properly safeguarded, we should entirely approve of this course as a means of lessening, though, we fear, far from removing, the constant demand for asylum extension." It appears that a legislative enactment will be required before this extension can be effected, and that, in the first place, the proposal will require most careful scrutiny in all its details.

We pass now, as in previous reviews, to a consideration of the statistical summaries of the returns made to the lunacy department, and this year's Report furnishes us with an admirable example, almost throughout, of the inconsistency of these figures, and points to the futility of any attempts to fairly and properly estimate the prevalence of or the conditions affecting insanity. The total number of persons

mentally affected and under the supervision of the Commissioners in Lunacy amounted on January 1st, 1896, to 96,446, an increase of 2,365 over that of the previous year, and this increase is commented upon as usual; but how the official enumeration of patients on a certain date can give any clue whatever to the increase of the total number of insane, even when limited to such as come under the Commissioners' cognizance, we utterly fail to perceive. Such an enumeration is not by any means like the question of population, the figures are too shifting and uncertain to make a date-estimation a basis; the true figures to be commented upon are the average number resident, and it would be well could calculation of this be carefully made officially instead of leaving the work to the managing officials of asylums. Taken on any other day in the year the figures would show a great dissimilarity to those recorded, for we are all aware that the occurrence of insanity in communities is not constant, but liable to enormous fluctuations in degree. It would, however, be too much to expect that radical changes could be made in a Report which bears the stamp of conservatism in all its statistical tables, and we must perforce accept such figures as are given us.

Of the total number of patients thus enumerated it will be found that 66·3 per cent. were located in County and Borough Asylums, 24·1 per cent. (*i.e.*, 11·3 per cent. in ordinary workhouses, 6·2 per cent. in metropolitan district asylums, and 6·6 per cent. with relatives and others) were in workhouses, etc., 4·1 per cent. in registered hospitals, 2·5 per cent. in metropolitan licensed houses, 1·9 per cent. in provincial licensed houses, ·6 per cent. in Broadmoor, and ·2 per cent. in naval and military hospitals. We are anxious that special note should be taken of these figures, as allusion will be made later to the small section in private asylums, of which this year's Report treats more fully than usual.

The ratio per 10,000 of reported insane on January 1st, 1896, to the population of England and Wales rose from 30·95 to 31·38, a differential increase of ·43 on last year's ratio, and an average annual ratio on that date for the decade of 30·09 per 10,000. As we showed last year, however, this is only playing with figures. Such statistical exercises are not at all sound, and do not serve to indicate the actual proportion of known insane even to the population, for the one set of figures is an actual sum total on a certain date, and is made comparable with an approximate

estimate on a totally different date. Ratios of officially known insane to the population can only be correctly estimated on the actual date of a census, when an official asylum census should also be taken; during the census intervals approximate ratios could only be given, allowance then being made for the increase of population between the Registrar-General's mid-yearly estimate and the date on which the Commissioners' annual returns are made (January 1st). Then even these ratios will be of official interest only, and no deductions whatever as to the prevalence of insanity are warrantable. A true ratio can only be obtained at the date of the census, when the Commissioners should urge the Government to include a special return in the census papers of all persons of unsound mind, whether officially known or not, in the kingdom; then only can we begin to comment on the prevalence of insanity and its increase or decrease.

The ratio per 10,000 of patients admitted into various institutions to the population has, according to the Report, risen to 6·09, or ·21 higher than last year. The actual figures are, however, of greater interest than the ratios to which the objections above cited may also apply. The Commissioners in their table exclude transfers and fresh reception order cases, as well as admissions to idiot establishments, but they should go further and exclude cases of recurrent and relapsing insanity as well as those in which there has been a known previous attack. In fact, admissions for purposes of numerical comparison should be only of first occurrences. There is an increase of 140 among private patients, of 654 among paupers, and of 41 criminals, or a total increase of 835.

The ratio per cent. of pauper insane to paupers of all classes on the 1st of January in each year gives us, as we have indicated in previous Reviews, the only fairly correct estimate, so far as this can be gathered from the Commissioners' Report, of the fluctuations of insanity in the country. Here we have the total number of paupers known and the total number of pauper insane known, as these latter come almost wholly under the cognizance of the Commissioners, and the table therefore is one of the most valuable in the Report. An inspection of this summary will show that the ratio has remained almost unaltered during the last five years, the average for that period being 10·29 per cent., while last year's ratio was 10·40 per cent. Whatever small percentage addition there may be in various years cannot be

attributed to "an alarming increase of insanity" so much as to the facilities which are now afforded the people of having their pauper insane properly treated and safeguarded. The number of paupers maintained in asylums, hospitals, and licensed houses reached the total of 64,548 (an increase on last year's total of 2,226), in workhouses there were 16,945 (an increase of 47), and as outdoor paupers 5,924 (an increase of 55). In other words 73·83 per cent. (·59 per cent. more than last year) of pauper insane were detained in asylums, 19·38 per cent. (a diminution of ·48 per cent.) were in workhouses), and 6·77 per cent. (a percentage diminution of ·13) were with relatives and others. From this steady increase in asylum relegation and corresponding decrease in workhouse and outdoor care it appears that the Commissioners are fully justified in asserting that much is thought of the four-shilling grant.

The total number of patients under detention on January 1st, 1895, amounted to 71,315, while the number admitted during the year came to 18,794, an increase of 916, and the largest number of admissions on record. The following table shows where the increase mainly occurred :—

	County and Borough Asylums.	Registered Hospitals.	Metropolitan Licensed Houses.	Provincial Licensed Houses.	Naval and Military Hospitals.	Criminal Asylum.	Private Single Patients.	Idiot Estab- lishments.	Total.
Increase ...	630	72	—	198	—	3	12	81	996
Diminution	—	—	7	—	73	—	—	—	80

This large increase in admissions occurring both among pauper and private insane, following on the remarkable diminution which was recorded last year, also among both classes, shows how remarkably these figures will vary, and how fallacious it is to pin faith on any records with respect to the insane as officially recorded, whether in proportion to population or in the mere survey of the figures as evidence of the Commissioners' scope of work.

The table dealing with transfers is quite meaningless. Fuller particulars even than those given in a subsequent table are needed before such a summary can be considered of any value.

The readmissions during 1895 on fresh reception orders, due to the lapse of previous reception orders, shows a sensible diminution only in the case of County and Borough Asylums, where no doubt a more systematic arrangement for the transmission of continuation orders and certificates is in vogue.

Recoveries during the year 1895 numbered 7,073, a diminution on last year's number of 63, the main decrease being in County and Borough Asylums (185), while both Metropolitan and Provincial Licensed Houses show an increase. Comparisons cannot on that account, however, possibly be drawn, innumerable complicating factors arising to falsify any such hasty deductions.

The proportion of recoveries to the total number of admissions during the year comes to 38·18 per cent., a ratio lower (by 2·13 per cent.) than that of last year, and the lowest

Years.	Recoveries to Admissions.		Recoveries to Average Number Resident.	
	per cent.		per cent.	
1876	39·69	Average 39·76 per cent.	11·69	Average 10·66 per cent.
1877	37·30		10·71	
1878	39·94		11·31	
1879	40·50		10·96	
1880	40·29		10·77	
1881	39·72		10·51	
1882	39·41		10·22	
1883	38·50		10·28	
1884	40·3		10·30	
1885	41·99		9·89	
1886	41·16	Average 39·27 per cent.	9·73	Average 9·85 per cent.
1887	38·56		9·41	
1888	38·71		9·54	
1889	38·81		9·44	
1890	38·59		9·87	
1891	41·04		10·58	
1892	38·94		10·08	
1893	38·45		9·95	
1894	40·31		10·13	
1895	38·18		9·78	

since 1877. If we calculate the percentages of recoveries to the average number resident, a perfectly fair estimate to take in this case in view of the fact that asylums are taken *en masse*, and that the proportion is only for comparison with that of previous years, we shall find that a similar diminution in the recovery-rate (by .35 per cent.) can be shown. For comparison we append a table giving the recovery-rates to admissions as computed by the Commissioners, and the recovery-rate calculated to the average number resident. It will be seen on comparing the last decennial average with that preceding that the rate has dropped in the one case .49, and in the other .81 per cent. How can this diminishing recovery-rate be explained save by the larger influx into asylums of chronic senile cases, especially pauper, which ought to be retained in workhouses?

The actual number of deaths during 1895 numbered 7,235, an increase on that of last year of 682, the increase being mainly in County and Borough Asylums (590). The proportion per cent. of deaths to the daily average number resident rose necessarily from 9.32 to 10.01 for all institutions; the greatest increase (4.92 per cent.) being among private single patients, the average for the decade (9.79) being very nearly the same as the recovery-rate calculated on the same basis.

A table of comparative death-rates deduced from the Commissioners' tables is here appended. It shows, as in previous years, how the insane and sane death-rates tend to approximate as age advances, and how much lower proportionately among the insane the female death-rate stands to the male death-rate as compared with the whole population female to male death-rate. It explains the well-known high average age of asylum inmates, and the preponderance in all asylums of females of all ages.

Excluding the extreme age periods the insane death-rate is about 4.36 times greater than the whole population death-rate.

The causes of death are tabulated as in last year's Report, and the list has now been extended to include all institutions for the insane. From this we gather that of the total number of deaths (7,182), general paralysis accounts for 15.0 per cent. (the actual number of male deaths being more than three and a half times the female deaths), pulmonary phthisis for 14.7 per cent., senile decay for 7.5 per cent., pneumonia for 7 per cent., cardiac valvular disease for 4.7 per cent., exhaustion from mania and melancholia for 3.8

per cent., apoplexy for 3·1 per cent., chronic Bright's disease for 2·9 per cent., and bronchitis for 2·8 per cent., the remaining ratios being distributed over a large number of diseases. Accident, violence and suicide amount together only to ·5 per cent.

Age Periods.	Death-rate per 1,000 Reported Insane.	Death-rate per 1,000 whole population.	Insane to whole population Death-rate.
Under 5 {	Males } — {	Males 55·0 } 50·7 ... {	—
	Females } {	Females 46·4 } {	
5—9 {	Males 71·0 } 105·1 ... {	Males 4·1 } 4·1 ... {	25·5 to 1
	Females 139·2 } {	Females 4·2 } {	
10—14 {	Males 48·9 } 55·0 ... {	Males 2·3 } 2·4 ... {	22·9 to 1
	Females 61·2 } {	Females 2·5 } {	
15—18 {	Males 67·8 } 60·0 ... {	Males 3·7 } 3·6 ... {	11·1 to 1
	Females 52·3 } {	Females 3·6 } {	
20—24 {	Males 58·9 } 56·2 ... {	Males 5·1 } 4·8 ... {	11·7 to 1
	Females 53·5 } {	Females 4·6 } {	
25—34 {	Males 72·9 } 66·7 ... {	Males 6·7 } 6·4 ... {	10·4 to 1
	Females 60·6 } {	Females 6·2 } {	
35—44 {	Males 106·4 } 80·7 ... {	Males 11·0 } 10·2 ... {	7·8 to 1
	Females 55·0 } {	Females 9·4 } {	
45—54 {	Males 99·5 } 81·0 ... {	Males 17·6 } 15·6 ... {	5·1 to 1
	Females 62·5 } {	Females 13·7 } {	
55—64 {	Males 119·0 } 96·6 ... {	Males 32·0 } 28·7 ... {	3·7 to 1
	Females 74·3 } {	Females 25·5 } {	
65—74 {	Males 211·6 } 176·5 ... {	Males 62·0 } 57·7 ... {	3·0 to 1
	Females 141·5 } {	Females 53·4 } {	
75—84 {	Males 430·4 } 338·0 ... {	Males 128·3 } 122·0 ... {	2·7 to 1
	Females 245·6 } {	Females 115·7 } {	
85 and upwards {	Males — } — {	Males 243·0 } 231·0 ... {	*1·3 to 1
	Females 305·6 } {	Females 219·1 } {	

* Females.

The tabular arrangement (Table XIV.) of the ratios of the yearly average of admissions to the population at the time of the last census (1891), to show we presume the prevalence of insanity in various callings, professions and occupations, we may for reasons stated in previous reviews discard as quite unserviceable; the space so occupied might, we think, be utilised to advantage by some more instructive information, which it certainly lies within the power of the Commissioners' office to supply.

The table giving the yearly average occurrence of the principal forms of mental affection, so far as is known

officially, during the quinquennial period 1890-1894, shows that 49·2 per cent. have been the subjects of mania, 26·5 per cent. the subjects of melancholia, while senile dementia was put down to 4·6 per cent. The other types of insanity here classified — “ordinary dementia,” “congenital insanity,” and “other forms” — can certainly not be deemed precise enough to afford information. With the facilities given the Commissioners, by detailed reports from all institutions immediately on admission and subsequently, such a table should more specifically indicate the various recognised types of insanity, and a full classified list of cases occurring annually would be of value. Of the occurring cases 70·5 per cent. were classified as first attacks, 8·2 per cent. were epileptics, 8·5 per cent. general paralytics, and 25·4 per cent. suicidal.

From the tables (XXII.-XXIV.) dealing with the causes of insanity, which we may note remain unaltered in their somewhat unsatisfactory classification, we gather that alcoholic intemperance accounts for 20·9 per cent. in males, and but 8·1 per cent. in females of the yearly average of all patients admitted into asylums, and appears to be the most potent exciting cause of insanity, while heredity as a predisposing factor (21·1 per cent. for males and 25·6 per cent. for females), and previous attacks (16 per cent. and 21·7 per cent. respectively) as predisposing cause, maintain their places as principal bases of occurring insanity. As usual, we find a host of causes, in fact all the Commissioners’ tabulated causes, entered as causative factors of general paralysis, and we are as far as ever from a proper estimate of the ætiology of this affection.

The number of voluntary boarders remaining in registered hospitals on January 1st, 1896, was 78, in metropolitan licensed houses 20, and in provincial licensed houses 46, a total diminution on last year’s figures of 30. Of the 219 admitted into registered hospitals, 95, or 43 per cent., had to be certified as patients.

Table IX., Appendix B, gives a summary of the total expenditure, average weekly cost of maintenance, etc., in County and Borough Asylums.

The admissions into the existing 69 County and Borough Asylums numbered 18,091, of which 15,898 were fresh admissions, or 630 in excess of those of 1894, and 2,725 in excess of the average for the preceding decennial period. The recoveries came to 5,996 and the deaths to 6,517, in

5,209 of which (or 79·9 per cent.) post-mortem examinations were performed. The insufficiency of asylum accommodation for paupers is as usual commented upon, and will continue to be the subject of adverse criticism until the Legislature empowers authorities to enforce more strictly the requirements of the Lunacy Act. The insanitary condition of certain asylums (four of these were mentioned in last year's Report as being in an insanitary state) is detailed in a special section. There were 16 suicides in County and Borough Asylums (as against 10 last year), but of these 3 deaths were due to acts committed prior to admission, and 1 occurred during leave of absence. Of the 12 which actually occurred during detention only 6 were known to be suicidal, and of these 2 had passed into a convalescent stage, in which vigilant supervision was not so strictly needed. In but 3 could negligence be attributed. The modes of suicide were:—1 (a female) by strangulation, 2 (both males) by drowning, 2 (a male and a female) by precipitation from a height, 1 (a female) by poison, 1 (a female) by suffocation, 4 (two males and two females) by hanging, and 1 (a female) by swallowing foreign bodies. The deaths by misadventure other than suicide numbered 24, inclusive of the murder of an attendant at Cane Hill Asylum. The causes of death were fractured base of skull (1), epileptic suffocation (4), impaction of food (4), exposure and starvation after escape (1), ruptured bladder (2), fractured ribs (6), scalding (2), fractured jaw (1), wound of head (1), and murder by a fellow-patient (1).

The cost of maintenance in County and Borough Asylums per week per head is given as follows:—

		s.	d.
In County Asylums	...	8	10 $\frac{3}{4}$
In Borough Asylums	...	9	6 $\frac{1}{4}$
In both taken together	...	9	0 $\frac{3}{4}$

In their remarks on registered hospitals the Commissioners allude to "the great value of this form of provision for insane persons of the higher class who are unable to afford the larger charges of the best of the licensed houses." Qualified to speak on this matter by a long experience, we venture to enter a respectful contradiction to the implied statement that the charges in the best of licensed houses are fixed unalterably at a higher rate than in registered hospitals. We know for a fact that charitable concessions for the poorer insane of the upper classes are made in many

of the leading private asylums, and the Commissioners could learn much to the credit of licensed houses in general were a more systematic inquiry made by them at their visits, not only of the initial charges, but also of those accepted later on. We have had experience on many an occasion of the refusal by registered hospitals to entertain the reception of patients at the terms paid for them in good licensed houses.

The whole report of the inquiry as to the allegations publicly made in the Press against Holloway Sanatorium is now published.

The Commissioners have unfortunately to add that another serious irregularity came under their notice during the year, and *Truth* has returned to the consideration of Dr. Philipps' shortcomings with renewed energy. The circumstances are detailed in the Report as follows:—"A female patient, who had been on the books of the hospital for several years, was sent out on trial in 1892, and died of phthisis in April, 1893, but no notice of her death was sent to the authorities at the Sanatorium. In April, 1894, the name of this patient was included in the schedule of special reports and certificates sent to this office as required by Section 38 of the Lunacy Act, 1890, and Section 7 of the Lunacy Act, 1891, and she was described as 'melancholic, believes she had ruined the world,' and as 'sparely nourished, no physical sign of disease, and still of unsound mind and a proper person to be detained under care and treatment.'

"In April, 1895, her name was placed before the Committee of the Sanatorium for an extension of leave of absence, which was granted, and in August a notice was sent to this office that the patient had died while on leave, upon which full inquiry was made, and the facts already stated were elicited. These facts were considered by us to be so serious, especially in their relation to the 'special reports and certificates' for the patients generally, that we felt that we had no alternative but to place them before the Solicitor to the Treasury. After careful consideration, however, he was of opinion that the statements in the Report, although evidence of great carelessness, were not 'wilful misstatements' within the meaning of the Lunacy Act, 1890, and did not, therefore, afford ground for prosecution.

"All the facts, however, were at once laid before the

Sanatorium Committee by our Board, and a strong letter of remonstrance was addressed to the Superintendent, from both of whom we received such explanation and apologies as were possible. The Committee subsequently made very proper special regulations, which will, we hope, render the repetition of such an occurrence impossible."

We cannot but express regret that the troublous times through which the Sanatorium has passed have not engendered greater carefulness on the part of those whose duty has been so gravely neglected. This haphazard method of dealing with serious responsibilities brings undeserved discredit upon asylum management, and would not be tolerated in the most easy-going club practice. A mere slip in the pressure of clerical work might well be pardoned, but the specific statement of "facts" relative to the mental and physical condition of a person dead for twelve months admits of no excuse. We are by no means sanguine that any regulations can be framed to prevent such incidents. Dr. Philipps must make a fresh start, and weigh well whether, after all, Holloway's Sanatorium would not be better served by men who are first of all competent and careful physicians, and make athletics a secondary consideration.

One suicide by hanging during leave of absence is recorded as having occurred in a registered hospital.

There is no record of suicide or misadventure in any of the idiot asylums, and but one suicide (a male) by strangulation in Broadmoor Asylum, and one suicide (a male) by hanging in Netley Hospital are recorded.

The licensed houses in the kingdom, according to the Report, number 75 (25 metropolitan and 50 provincial), but on going through the list, Appendix L, we can only find 24 metropolitan and 48 provincial, or a total of 72. There will be found in this year's Report entries made by the Visiting Commissioners at their last visit in the year to each of the licensed houses, and we are glad to hear that it is proposed to continue this annually. Such entries will, perhaps, when brought to the notice of the public, allay the mistrust and suspicion with which private asylums are still regarded in some quarters, and will serve as an official answer to the noisy minority who, from motives perverted or base, air their vituperations against licensed houses as "sinks of iniquity" and "dens of misery." It is of the small section

of certified insane (4·4 per cent. of the total number) located in private asylums that so much of an unwarrantable nature is written. Some moral support of a stronger character than the usual apologetic excuse for their existence, yearly contained in these Reports, should, we think, be given to licensed houses by the authorities who are best qualified to know that their management is creditable.

The death in a metropolitan licensed house of a patient by a fall from a roof is recorded, and one suicide (a male) by stabbing, and one casualty (fractured ribs in a general paralytic) occurred in provincial licensed houses.

The number of single patients has diminished from 430 to 410, or a total decrease of 36 since the date of the present Act. Is this diminution not attributable to the fact that the Commissioners refuse to extend to applicants the provisions of Sec. 46 by which they would be permitted the charge and care of more than one patient?

We cannot close our annual review of this Report without expressing our own sense of regret and the regret of all engaged in lunacy work in England and Wales, at the sudden death in September, 1895, of one who had devoted his energies to the cause of the insane, and who combined a genial courtesy of manner with a strictly impartial honesty of purpose in all he did. We allude to Mr. Charles Palmer Phillips. His loss will be severely felt, not only by his colleagues but by us all.

Thirty-eighth Annual Report of the General Board of Commissioners in Lunacy for Scotland. Edinburgh. 1896.

The lunacy record of Scotland for the year 1895 may, on the whole, be regarded as a favourable one, and more especially is it so when it is contrasted with that of the preceding year. The total number of the registered insane on 1st January, 1896, was 14,093, an increase during the twelve months of 241, as compared with 552 during 1894, or, in proportion to the population, an increase of only 3 per 100,000 as compared with 10 in 1894. While the estimated increase each year of population amounts to 0·75 per cent. the percentage increase in the total number of registered lunatics in 1894 was 4·2 and in 1895 only 1·6. And when one refers to the statistics which may be regarded as relating to the *occurring* insanity of the country the record is more

Number of Lunatics at 1st January, 1896.

Mode of Distribution.	Male.	Female.	Total.	Private.			Pauper.		
				M.	F.	T.	M.	F.	T.
In Royal and District Asylums ...	3,907	4,323	8,230	863	938	1,791	3,117	5,385	8,502
„ Private Asylums ...	57	87	144	57	87	144	—	—	—
„ Parochial Asylums, i.e., Lunatic Wards of Poorhouses, with unre- stricted Licences ...	750	864	1,614	—	—	—	750	864	1,614
„ Lunatic Wards of Poorhouses with restricted Licences ...	415	426	841	—	—	—	415	426	841
„ Private Dwellings ...	1,137	1,674	2,811	37	74	111	1,100	1,600	2,700
„ Lunatic Department of General Prison ...	6,339	7,374	13,713	947	1,099	2,046	5,392	6,275	11,667
„ Training Schools ...	40	17	57	—	—	—	—	—	—
„	230	113	343	101	55	156	119	58	177
Totals ...	6,599	7,704	14,303	1,048	1,154	2,202	5,594	6,333	11,927

favourable still. From Table V., Appendix A, which gives the total number of lunatics registered during the year, who had never been previously registered, it appears that while the proportion of such cases per 100,000 of population was in 1894 59.3, that for 1895 was only 56.0. Stated in another way, the percentage increase of 1894 over the preceding year was 6.25, while in 1895 there was an actual decrease amounting to 4.6.

The distribution of the insane on 1st January, 1896, is shown on the accompanying table (see p. 133), and the changes that have taken place during the year have resulted in an increase of 60 private and 276 pauper patients in Royal and District Asylums, a decrease of 8 in private asylums, a decrease in parochial asylums of 112, and in lunatic wards of poorhouses of 23 pauper patients, and in private dwellings a decrease of two private and an increase of 23 pauper patients. The total increase of 214 registered lunatics is made up of 50 private and 164 pauper patients, and the increased number in establishments is 193 and in private dwellings 21.

The number of private patients admitted to establishments during the year was the same as in the preceding year, while the pauper admissions, amounting to 2,534, were 127 less than during 1894 and 106 more than the average for the five years 1890-94.

Of the discharges as recovered from establishments 203 were private patients, which is six above the number for 1894 and seven below the average for the five years 1890-94, and 1,164 were pauper patients, which is 34 above the number for 1894 and 92 above the average for 1890-94. The recovery-rate for 1895 and the two preceding quinquennials is shown in the following table:—

Classes of Establishments.	Recoveries per cent. of Admissions.		
	1885-89.	1890-94.	1895.
In Royal and District Asylums... ..	39	39	33
„ Private Asylums	34	38	26
„ Parochial Asylums	42	43	46
„ Lunatic Wards of Poorhouses ...	6	7	6

The death-rate, shown in the following tables, has risen,

the increase being exclusively among pauper patients, that for private patients being under the average.

Classes of Patients.	Proportion of Deaths per cent. on Numbers Resident in all Establishments.		
	1885-89.	1890-94.	1895.
Private Patients	6.6	7.6	6.5
Pauper Patients	8.1	8.7	9.2
Both Classes... ..	7.7	8.5	8.7

Classes of Establishments.	Proportion of Deaths per cent. on Number Resident.		
	1885-89.	1890-94.	1895.
Royal and District Asylums	7.8	8.8	8.4
Private Asylums	8.0	6.3	10.8
Parochial Asylums	8.9	9.6	10.8
Lunatic Wards of Poorhouses	5.5	4.6	5.7

The changes that have taken place during the year result in a slight diminution in the relative proportion of pauper lunatics boarded-out in private dwellings, as compared with those accommodated in establishments. The increase of the former by 23 reduces the percentage from 23.3 to 23.2, the proportion to population remaining unaltered, while in the case of establishments the addition of 141 represents an increase of 2 per 100,000 of population. In other words the percentage increase of those in private dwellings is 0.9, while that for establishments is 1.6. This change cannot be attributed to any change in the relative cost of maintenance in private dwellings and establishments, the figures being identical with those of the previous year, but is probably to some extent due to two factors, the restriction of licenses for more than two lunatics, and the prohibition of any increase in those localities where aggregations of patients have tended to become unduly great. This year it so happens that the reports on lunatics in private dwellings are made by three Deputy Commissioners who are entirely new to the work, and these, in the favourable way in which the system of boarding-out is viewed, differ in no essential

respect from those of their predecessors. That the system, economically and otherwise, and both as regards patients and public, possesses advantages will not be denied, but that it has disadvantages is illustrated by an occurrence which took place in Fifeshire, which resulted in the death of a child at the hands of a patient, and by complaints of a general character regarding the patients in the same locality. The fatality, it is pointed out, is the only one of its kind that has happened during 38 years among an average number of 2,000 patients, and the Commissioners "see no ground for attaching any special significance to the occurrence." Looking over the Reports of the past ten years one finds "sexual accidents" of various sorts recorded almost annually among patients boarded-out, but this year the only occurrence of the kind happened to a "middle-aged demented female who was taken liberties with by a drunken harvester." Accidents of this sort are fortunately absent in reports referring to asylums.

The section of the Report dealing with the causes of death of patients in asylums contains some observations of very great interest. The proposed discontinuance of Table Xa., which deals with the causes of death in Royal and District Asylums, is somewhat to be regretted. It serves a useful purpose by indicating over a period of years, among other points, the geographical distribution of certain factors in the death-rate, and any variations which may be taking place in that distribution, and though the figures upon which this table is based will still be given year by year, we confess we should be sorry that it should disappear completely, and should like to see it continued, say, as a five-year table. There is substituted for this table, which refers to Royal and District Asylums only, one which gives the results shown by all classes of establishments combined from the year 1870.

Dealing with the causes of death for the period 1858-95 the Commissioners point out that, comparing the first 18 years with the whole period of 38 years, the "figures show practically no change between the earlier period and the whole period, as regards General Paralysis and Other Forms of Brain and Spinal Diseases." Thus, in the first 18 years, 18·7 per cent. of male deaths were due to general paralysis, and 19·2 in the whole 38 years, while for females the proportions are respectively 4·8 and 4·7. The deaths from other forms of brain and spinal disease in the correspond-

ing periods are :—For males, 28·8 and 27·7 ; and for females, 27·3 and 27·4 per cent. of total deaths.

That these figures imply “practically no change,” at least, as regards later years, is an opinion with which we are unable to agree. Nay, when the figures of late years are analysed, the change is by no means even a slight one.

The following table gives the average number of deaths from general paralysis per cent. of total deaths in establishments during the 10 years 1886-95 :—

AVERAGE PERCENTAGE OF DEATHS FROM GENERAL PARALYSIS.

Years.	Royal and District Asylums.		Private Asylums.		Parochial Asylums.		Lunatic Wards of Poorhouses.		Total.			Sex Proportion.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	T.	M.	F.
1886-90 ...	20·0	5·5	22·7	2·9	21·1	5·4	2·0	0·8	19·3	5·1	12·4	4·0	1
1890-95 ...	21·6	4·8	26·6	0·0	24·9	5·5	0·0	0·0	21·4	3·6	12·9	6·6	1
Increase ...	1·6	—	3·9	—	3·8	0·1	—	—	2·1	—	0·5	—	—
Decrease ...	—	0·7	—	2·9	—	—	2·0	0·8	—	1·5	—	—	—

An increase of one-half per cent. in the five years ending 1895 from general paralysis may seem hardly worth consideration, and yet it means a very great deal in reality. This table shows that the increase is one which affects males only, among whom it amounts to 2·1, while among females there is a decrease amounting to 1·5. The altered sex-proportion, too, shows how men are becoming increasingly liable to general paralysis, and women less so. It is particularly striking how the increase in males, and decrease in females, alike attain their maximum among private patients. In Murray's Asylum, which is the only public institution containing private patients only, and in Private Asylums not a single woman's death is returned as due to general paralysis in the second period of five years dealt with. This represents a decrease in the former of 6·6, and in the latter of 2·9, or in both combined 4·1. How different is the case with males. In Murray's Asylum the increase amounts to no less than 21·3, in Private Asylums to 3·9, or in

both combined 12·6. The next greatest increase among males takes place in parochial asylums, whose population, entirely pauper, is drawn from the large urban centres of Glasgow, Greenock and Paisley, and it is these districts solely which are characterised by any increase of this affection among women. How many of the 37 women who died in these asylums in these 10 years, we wonder, belonged to the class of "unfortunates."

Let us carry the investigation of this increase of general paralysis among males somewhat further. The total number of male deaths in all establishments, in the second half of the decennium, represents a percentage increase, when compared with the first, of 26·2; the corresponding increase of deaths from cerebro-spinal diseases is 25·9; from cerebro-spinal diseases, excluding general paralysis, 16·2; and from general paralysis 40·5. On the face of it, this can only mean one thing, namely, that the increase of deaths from general paralysis in men is becoming more and more out of proportion to that from other causes, that general paralysis in an increasing degree is replacing other forms of brain disease.

Further, this increase, in its geographical distribution, presents a noteworthy peculiarity. Practically, it occurs entirely in those institutions which are characterised by a high rate of mortality from the disease, those establishments, on the contrary, which have a low rate showing but very little change, and that in the direction of decrease. Thus, taking a series of establishments in which the average percentage of deaths from general paralysis during the 10 years is 24·8 (the rate for all establishments being 20·5), it is found that in the first quinquenniad the percentage is 22·6, and in the second 26·7, an increase of 4·1, while in the case of another series, in which the ten years' average is 13·8, the proportion for the first and second halves are 15·6 and 15·5, a decrease of 0·1. Generally speaking, the first series represents the urban and industrial communities, the second the rural and Highland population.

It is pointed out that the increase of general paralysis coincides generally with the appearance and course of the influenza epidemic of 1890-92, but we confess we are unable to see that very much weight can be attached to this. If influenza were held to account for the increase—and the same would apply to the argument of increased diagnostic capability—how comes it that the disease should be diminish-

ing in females and increasing only among males? or how should it be that the increase is occurring only in certain districts and certain classes, while others are characterised by a diminution? There must be an explanation other than this, but with the absence of information as to the etiology of this and other forms of insanity it is impossible to arrive at any definite conclusion, desirable as that might be.

There are many other points of interest upon which we would desire to have more definite information. There must be some explanation, for example, why, in 1895, 20 per cent. of the deaths in English Asylums are due to general paralysis, while in Scotland the proportion is only 13·4, and why for every woman that dies from general paralysis there should be in England 3·6, and in Scotland 6·4 men, why Scotland has a pauper-lunacy rate of 330, and England only 314 per 100,000 of population, and why in England 10 per cent. of all paupers are lunatics, while in Scotland it is 19. We look to the Commissioners to devote their attention to such matters of large social and scientific interest.

*The Forty-Fifth Report of the Inspectors of Lunatics, Ireland
(for the Year 1895).*

The Report opens, as usual, with a summary of the relative numbers of insane in establishments on the 1st January, 1895 and 1896 respectively:—

	On 1st Jan., 1895.			On 1st Jan., 1896.		
	Males.	Females.	Total.	Males.	Females.	Total.
In District Asylums ...	7,002	5,769	12,771	7,287	6,045	13,332
„ Central Asylum, Dundrum	140	21	161	140	23	163
„ Private Asylums ...	223	353	646	305	358	663
„ Workhouses	1,686	2,390	4,076	1,724	2,368	4,112
„ Prisons ... ..	...	1	1	1	...	1
Single Chancery Patients in Unlicensed Houses ...	...	...	...	47	39	86
	9,121	8,534	17,655	9,504	8,853	18,357

The Chancery patients are included in this table for the first time, so that in calculating the increase for the year

1895 these 86 patients must be deducted from its total. There were, then, including uncertified patients in work-houses, 616 more patients under care on 1st January, 1896, than on the same date of the previous year. This increment, mildly described as "above" the average increase for the preceding ten years, 348, was largely in excess of it, in fact not far from double, but was not due to any increase in the number of admissions, which (excluding those into work-houses, of which there is no record) were less by 7 than those of 1894, but to a reduction in the number of discharges and deaths, which were fewer by 70 and 169 respectively.

Confining our attention to the District Asylums we find that the increase in the number of patients under detention at the close of 1895 amounted to 561. The total admissions were 3,216, being less by 13 than in the previous year. The first admissions numbered 2,458, and the readmissions 758. The latter were fewer by 23, and the former more by 10 than in 1894. The first admissions were, however, identically the same as in 1893. The proportion per 10,000 for the three years 1893, 1894, 1895, were 5·37, 5·32, and 5·32 respectively, so that the return of lunacy, when taken in relation to the sane population, was practically the same for each period. 1,264 patients were discharged as recovered, and 447 as unrecovered, making a total of 1,711 discharges. The recovery-rate (average of all the District Asylums) was 39·3 per cent. on the admissions, but, like the death-rate, differs widely in individual institutions, ranging from a minimum of 32·5 in Armagh to a maximum of 56·4 in Killarney. But even in the same asylum fluctuations in the recovery-rate occur, Killarney being an instance, as in the years 1890 and 1891 the ratios were only 22·1 and 21·3 respectively, which are probably amongst the lowest on record. (Cases occur at times in which there is some difficulty in deciding under what heading to place a discharged patient. One who has been epileptic for years, for instance, without being insane becomes maniacal, and is sent to an asylum. The attack of mania subsides and he reverts to his former condition. He has recovered from his insanity but not from his epilepsy. Is he to be entered as "recovered" or "relieved"? A more rigid judgment would incline to classing him under the latter heading, a more lenient one under the former.)

There is a remarkable constancy in the general recovery-

rate of insanity. The ratio to admissions averages always in or about 40 per cent., and this has been maintained for a long period of years. English statistics show a similar constancy in this respect. For the ten years 1879 to 1888 the average recovery-rate in County and Borough Asylums was 40·16, and for the last decade, 1886 to 1895, 39·19. In 1895 it was only 37·71, but this is under the average and exceptionally low. It is a distinctly discouraging fact that with the enormous advance in the treatment of the insane, moral and physical, hygienic, dietetic, medicinal, and even surgical which has been such a marked feature in lunacy history for the past thirty years, the great aim and end, presumably, of all the costly measures which have been taken for the bettering of their condition—the increased curability of insanity—has not as yet been reached. And Ireland, which is on the whole far behind the sister country as regards provision for the scientific treatment of insanity, in respect of her recovery-rate can show just as good a record as England, if not a positively better one, although, of course, allowance must be made for the difference in the nature of the cases received.

The percentage of deaths on the daily average was only 7·1 as compared with 8·8 in 1894, the diminution in fatality being most noticeable in the case of consumption, especially as regards the female sex. In 1895 the deaths from this disease were 128 males, 129 females, total 257; while in the previous year the corresponding numbers were 139, 185, 324. The amount of phthisis mortality, which remains constant for the whole of Ireland, forming from 11 to 12 per cent. of the whole mortality, varies greatly in the several asylums, as a reference to the statistical tables in the annual reports of the Medical Superintendents will show. Armagh and Waterford, for instance, enjoy a remarkable exemption from this disease, death being attributed to it in only two cases in each of these asylums, being a proportion of only $6\frac{1}{2}$ per cent. of the deaths from all causes. In Killarney, on the other hand, the proportion is over 35 per cent., in Cork over 36, in Limerick 38; while Downpatrick, Carlow, and Kilkenny take an unenviable lead with ratios of 40, 43, and 47 per cent. respectively. These variations are within much wider limits than might reasonably be expected in the case of aggregates of patients belonging to much the same grades of society, and subjected to not very dissimilar surroundings and régime. It would be interesting to know whether the

mortality from phthisis varies to at all the same extent amongst the sane population in the several asylum districts; or whether the phenomenon can be regarded as due to any differences in the general treatment of patients in such matters as diet and clothing, heating and ventilation, indoor or outdoor life, overcrowding, etc. The low dietary in use in the Kilkenny Asylum, coupled with the fact that it has the highest mortality from phthisis, certainly suggests a relationship of cause and effect. With reference to this dietary the Inspector remarks: "The existing diet-scale in this asylum is certainly very inferior to that in force in other similar Irish institutions;" and when, on reference to the scale, we find that bread and butter and cocoa constitutes the patients' *dinner* on four days of the week, the comment seems amply justified.

General paralysis would appear to be increasing. The average number of deaths assigned to this disease for the five years preceding 1895 was 25. The return for that year gives 39, of which 16 were in the Richmond Asylum. Whether the disease is really gaining ground in Ireland, or whether the increase is only an apparent one, the result of more accurate diagnosis, is not an easy matter to decide.

The total number of deaths was 933, in 231 cases of which post-mortem examinations were made, scarcely 25 per cent. Some of the asylums, notably the Richmond, have a very creditable record in this respect, and merit the commendation of the Inspectors: "At some of the asylums the investigation of the cause of death and the scientific study of disease are being carried out with great energy, and every praise is due to the medical officers for the zealous manner in which their time is devoted to this important object." On the other hand "at Castlebar, Clonmel, Ennis, Enniscorthy, Kilkenny, Letterkenny, Monaghan and Waterford, no examinations of this kind were made." At two of these asylums, Enniscorthy and Waterford, no Assistant Medical Officer has as yet been appointed, notwithstanding the Privy Council Rule LV, which enacts—"there shall be appointed in every District Asylum in Ireland at least one officer to be called the Assistant Medical Officer." The Governors of these asylums appear to have ignored the existence of this rule up to this, but in the interests of the patients they should be called upon to comply with it. Pathological research is almost out of the question with a medical staff so under-manned. In Ireland there are certain difficulties

as regards post-mortems due to the peculiar prejudices of the people, and also to the practice of "waking" the dead so generally prevalent among the rural population. Until this custom becomes obsolete, which is not likely to occur for some time to come, it will continue to be a formidable obstacle to the performance of autopsies in country districts.

In the urban districts, on the other hand, where the population are more instructed, the ill-conceived and worse worded regulation in the rules of the Privy Council, to which we recently drew attention, heightens prejudice and suggests the sacred right of opposition.

Of 3,216 admissions, 2,451, or 76 per cent., were committals on warrant, precisely the same number as in 1894. This highly objectionable mode of admission, whereby insane, that is sick, patients are treated as criminals has frequently been made the subject of adverse comment both by the present Inspectors and by their predecessors. In this Report they write to the same effect:—"As we have pointed out in previous Reports we are strongly of opinion that the procedure for authorising admission to public asylums in this country should be assimilated as far as possible to that which obtains in England." But beyond the expression of pious opinions of this sort nothing appears to have been done to obtain the desired result. Surely pressure, and strong pressure, should be brought to bear in the proper quarter to have this anomalous mode of procedure abolished.

But three deaths resulted from suicide, and two from accidents. This fact in itself testifies to the care and efficiency of the various staffs of attendants. The three suicides do not appear to have been due to any negligence on their part.

As regards accommodation we find the too familiar announcement that "the various district asylums throughout Ireland are without exception fully occupied, most of them to a degree amounting to overcrowding." In 19 out of the 22 asylums new works for extending accommodation and improving existing structures are either being carried out or are in contemplation. A new asylum is in process of construction at Antrim for the county of same name, which is expected to be ready for use in 1897. At Londonderry, it has been decided to abandon the old asylum, which is situated in the midst of the city, an undesirable site, and erect a new asylum about two miles off in a good

position. A similar project is also under consideration at Belfast for similar reasons. The "Plenum" system of heating and ventilation has been introduced in Mullingar and Letterkenny Asylums, and will probably be adopted in others at no very distant date. Much needed sanitary blocks are being added to many of the existing structures, new dining-rooms are being provided in several, with improvements in the kitchen and laundry departments, while detached hospitals, the absence of which is one great defect in nearly all Irish Asylums, are now about to be erected in quite a number of them. The necessity for these improvements the Inspectors have not failed to discuss with Boards of Governors for some years past, who in turn have in most instances shown a generous desire to further such improvements. Rarely in the history of asylums has there been such a widespread acknowledgment of defective provision or such universal wish for reform in this important department.

An exception is to be found, we regret to say, in the case of the Richmond Asylum. Here affairs have been for a long time, and are still in evil plight. The overcrowding which is fast becoming unbearable, and the general insanitary condition which prevails, the amount of dysentery and diarrhoea which occurs, and the recrudescence lately of that exotic disease *beri-beri*, have become a by-word, and are little short of a disgrace to a metropolitan county. In 1890 it was decided to erect another asylum, but six years have been allowed to elapse and hardly a commencement has been made. This delay has been in the opinion of most persons unnecessary, and in the eyes of many, who are best qualified to judge, little short of culpable. The Governors lay the blame at the door of the Board of Control, which is stated to be the body legally responsible. Resolutions condemnatory of its action, or rather inaction, have been passed at their meetings, and outspoken censure of the Board of Control has been expressed in articles and correspondence in the public press, sometimes going so far as to imply that that body is more of a hindrance than a help where energy and despatch is needed to meet circumstances of urgent difficulty. We have reason to believe that this dilatoriness on the part of the Board of Control is the cause of vexatious delays in the carrying out of projects recommended long previously by Boards of Governors of other asylums, who, however, have not made their grievances as public as have the Governors of the Richmond Asylum. This condition of things is probably in great part due to another of the anomalies of the Irish Lunacy system,

namely, that under which the control and administration of the affairs of this great public department, a department rapidly growing in extent and importance, is in the hands of an unpaid Government Board, a mere buffer-board, designed only to receive and diffuse blows from all sides: irresponsible to the public, because it is unrepresentative, and irresponsible to the Government, because it is not paid. This cardinal error should be rectified. If the transaction of local affairs in Ireland cannot be handed over to local bodies, as it is everywhere else, it behoves the Government to see that the machinery which they themselves supply will work, and that the management and control of lunacy business be placed in the hands of thoroughly trained and competent men, adequately remunerated in proportion to their responsibilities.

The Inspectors' reports on individual asylums are on the whole favourable, Downpatrick, Londonderry, and Mullingar receiving special commendation. The following extract from the report on Downpatrick Asylum reflects the highest credit on Drs. Nolan and O'Flaherty:—

“It is impossible to visit this asylum without carrying away a most favourable impression of the zeal and efficiency with which it is conducted. One of the best features in the institution is the marked effort which is made to accentuate its hospital character, and to treat the patients individually. Every patient on admission is most carefully examined, and any organic or functional disorder diagnosed, and suitable treatment prescribed. This is shown by the large number of patients—often one-fifth of the whole—under special medical treatment; and apart from any direct therapeutic good which the drugs prescribed may exercise, the knowledge that something besides kind treatment and the provision of comfortable surroundings is being done to promote recovery, influences most favourably the mental state of many patients. The reproach sometimes levelled, that many asylum physicians leave physical as well as mental symptoms to time and nature to cure, the ‘*vis medicatrix naturæ*,’ certainly does not apply to Downpatrick.” *O, si sic omnes!*

On the other hand the condition of Castlebar receives some severe handling, and the Medical Superintendent does not himself escape a meed of censure. The dietary especially is condemned in no measured terms, not alone the bad quality of the provisions, but also the slovenly manner in which the meals are served:—

“We feel strongly on this subject, because every visit we

make to the institution impresses us more and more with the miserable character of the patients' dietary. It is bad on paper, but it is far worse as actually served to the patients. . . . The dinner on three days in the week consists of oatmeal and barley gruel, and on three other days of, what is called, meat soup, but which, whenever we have seen it, would be more fitly described as greasy broth, with the addition of a small portion of inferior and indigestible meat. On the first day of our visit, gruel was served for the day's dinner. This gruel was so unpalatable and badly made as to be almost unfit for human consumption, and we saw very many of the patients dining on that day on a piece of dry bread. On the second day of our visit we again saw the patients at dinner, which consisted of broth made by boiling fresh beef and fat bacon together in a cauldron with some cabbage leaves. The portions of meat served with the greasy broth were cut up one hour and a half before the dinner was served, and the meat was so stringy and tough as to be, we should say, quite indigestible."

There is some room for improvement in Castlebar.

The average annual nett cost of maintenance was £22 9s. 6d., or 8s. 8d. per head per week, the Richmond Asylum showing the maximum rate of £30 18s. 8d., an amount to which the Inspectors call unfavourable attention, and Castlebar the minimum of £18 10s. 9d. The latter does not occasion surprise after perusal of the Inspectors' report. Mullingar comes second in point of expense, with £26 12s. 9d., a moderate amount having regard to the admirable arrangements for the care and comfort of the patients in that asylum. An excellent arrangement is in operation at Mullingar by which the Board of Control advances small loans from time to time to be expended by the Governors, at their own discretion, on minor building and repairing works. Elsewhere in Ireland all upkeep is charged, under the head of repairs and alterations, to the maintenance account. Maryborough and Enniscorthy come next (£24 17s. and £23 14s. respectively), while the rest of the asylums tail off towards the minimum, Cork, Downpatrick, Kilkenny, and Sligo being all under £20 per annum!

The reports on the condition of the insane in workhouses are not cheerful reading. In some, improvements have been introduced as regards dietary, bedding, baths, etc., but in the large majority the arrangements are anything but creditable. Some Boards of Guardians have made praise-

worthy efforts to better the condition of this hapless class, while in the case of others both their eyes and their consciences would seem to be slumbering. And in their case, when glaring faults are brought under their notice, as in previous Reports of the Inspectors, negligence in taking any measures to correct them must be held inexcusable, inasmuch as *they* are not dependent, even in part, on the activity of the Board of Control.

The Reports on private asylums are on the whole favourable and contain nothing which calls for special comment.

Pauper Lunacy in its Statistical and Social Relations to Ordinary Pauperism. By T. W. L. SPENCE, Secretary to the General Board of Lunacy for Scotland.

This is a short paper—reprinted from the *Scottish Review*, January, 1895—but it is a mass of statistics, and close reasoning. Mr. Spence claims that non-lunatic or ordinary pauperism is of a nature radically different from that by virtue of which our asylums are filled. We say our asylums, for as far as we can collate his Scottish figures with those of England the same arguments appear to apply. He shows that (1) from 1873-1893 total pauperism in Scotland has decreased from 31 to 23 *per mille*; (2) from 1868-1893 ordinary pauperism has decreased in actual numbers 38 per cent., while lunatic pauperism has increased 90 per cent. The numbers in the latter class are so much smaller than in the former that in spite of the increase therein the net decrease is as stated in (1). (3) In proportion to population ordinary pauperism has decreased 50 per cent., while pauper lunacy has risen 52 per cent. in the same period. (4) In actual total cost in the same period ordinary pauperism has decreased 9 per cent., while pauper lunacy has increased 126 per cent. (5) In cost *per caput* ordinary pauperism has increased 46 per cent., while pauper lunacy has increased 19 per cent.

In relation to the cost we note that the calculations are founded only on maintenance. Apparently no consideration is made of capital charges for the erection and furnishing of the new asylums which are springing up on all sides. The interest and redemption instalments on these charges should be reckoned in the cost of pauper lunacy, and in comparison with the cost of workhouses, etc., which should be high stationary in view of the net decrease in pau-

perism, will be a formidable item in contrasting the total cost.

As Mr. Spence says, if the foregoing figures moved in the same direction, even if they varied, we might contend that the two forms of pauperism had something in common as to origin; but in view of the fact that they run away from each other with increasing velocity he maintains "that we are driven to the conclusion that there must be circumstances controlling the statistics of the two classes which cannot be explained either by differences of administration or by the mere fact that paupers of one class are sane and those of the other insane." The controlling circumstance clearly is that pauper lunacy is not true pauperism—it is accidental for the greater part, manufactured by the occurrence of the disease in a family which cannot treat and support an unproductive member at the minimum cost of appropriate treatment and support. He draws the conclusion that for this reason while the poor are now, and may continue to be, rather less with us, the pauper lunatics cannot be expected to decrease. He takes 80 per cent. of the population as the field from which pauper lunacy is gathered—this being supported *pro tanto* by the fact that at the last census 85 per cent. resided in houses of not more than four rooms.

Of course Mr. Spence allows that some non-lunatic cases of pauperism may arise from accidents of bodily disease, etc., while on the other hand some cases of lunatic pauperism may land in the asylum instead of the workhouse from the accident of insanity, but we think that the allowance made by him is too restricted. Further, though he uses the statement that it is "an unavoidable condition of successful poor-law administration that nothing shall be done to lessen the feeling that there is degradation and loss of self-respect in accepting parochial relief" as an argument for a further differentiation between ordinary and lunacy pauperism which is most desirable, we cannot believe that self-respect, while preserved in the asylum, should be lost in the workhouse. Surely the dividing line should be the personal capacity to relieve the ratepayers from the burden. The man who can and will not is the degraded one, wherever he be.

In our opinion the chief moral of Mr. Spence's paper, and it is a most weighty moral, is this: "The costliness of District or County Asylums is sometimes spoken of as a waste of public money. . . . When the idea of extravagance is

made to rest upon the fact that they are intended for the accommodation of 'paupers' it is forgotten that in reality these asylums exist for the care and cure of the insane belonging to certainly more than four-fifths of the population of the country."

A Plea for a Simpler Life. By GEORGE S. KEITH, M.D., LL.D., F.R.C.P.E. Adam and Charles Black. Pp. 149. Price 2s. 6d.

The title of this little book led us to hope that in it we should find among other matters advice on the many social questions which make life difficult nowadays—advice as to the balance of work and play, as to the suiting of work to the capacity of the brain, as to the relations of one to another and so forth. From one who has seen so much of life and of professional work as Dr. Keith has, such advice would indeed be valuable. But, alas, this large subject of a simpler life is whittled down to a consideration of what man should take—or what he should not take rather—in the way of food, drink, and drugs. Still, what the author has to say on these points is of weight, coming from one who has the courage of his opinions. Dr. Keith allows that there is nothing absolutely new in his views; he aims apparently at giving semi-professional reasons for practices the benefit of which, under ordinary circumstances, no one denies. He preaches the doctrine of rest to the stomach in illness, and no doubt he is quite right in claiming that many slight cases become serious, and many serious cases become fatal, from excessive diet at the outset. But we consider that his views are somewhat extreme, and while they can be adopted often, they must not be adopted always. He gives plenty of cases in his own practice where his treatment has triumphed over that of his contemporaries, but we doubt not that the latter might have something to urge *per contra* had they been alive. They are not, for, as Dr. Keith sadly reflects, they have mostly gone before, having failed to follow his principles of a simpler life. Dr. Keith follows Sir B. W. Richardson in his argument that alcohol in any form is not necessary for life. Oddly enough he quotes with approval the dictum of an insurance authority that a drinking Highlander about sixty years of age has a much better life than has a well-fed Yorkshire teetotaler. Circumstances alter

principles apparently. He uses a somewhat dangerous argument against alcohol, viz., that nature does not provide it. What does nature provide except milk, oysters, fruit, and pig-nuts that can be taken without some preparation, which, however simple and mechanical it may appear, must lead to chemical changes not more recondite than fermentation? And are we to believe that all that is provided by nature may be taken with safety? This is one of the grounds on which he does not disapprove of tobacco in moderation. Dr. Keith inveighs strongly, and we think righteously, against the enormous volume of drugs and preparations of drugs nowadays. We could have wished that he had included many of the so-called chemical foods and other devices for dodging nature, which used in bulk and in many cases on pseudo-scientific grounds do more harm, we believe, than the suspected articles which they are intended to replace.

We think that Dr. Keith's book will do good if it helps to pull the world ever so little to his way of thinking, but we feel quite sure that if the world came right over to him it would be but a poor place to live in. We cannot hold out any hope that he will bring our medico-psychological world to endorse the following: "The blood gets loaded with animal matters of which they (the kidneys) fail to relieve it, and these are deposited in various organs, in some in the form of fibrin, which by and by hardens and destroys more or less their substance and their functions. A very common form of evil arising in this way is called general paralysis. The symptoms and pathological changes vary infinitely, according to the part of the nerve-centres affected and the stage of the disease. I cannot recall a case which was not that of a previously healthy individual, and who lived freely."

Mental Physiology, especially in its Relations to Mental Disorders. By THEO. B. HYSLOP, M.D., Lecturer on Mental Diseases to St. Mary's Hospital Medical School, etc. Pp. 539. (J. and A. Churchill, London.) Price 18s.

In this book Dr. Hyslop's aim has been "to bring together some of the more prominent phenomena of the brain and of the mind, both in their normal and morbid aspects." He insists strongly on the necessity of distinguishing clearly between what is actually proved and known and what is merely theoretical. On the one hand there are

the facts which have been ascertained by the physical examination of brain structure and function (cerebral anatomy and physiology); on the other hand we have the phenomena of mind as studied subjectively (psychology). But while it is clear that "the outer world of objects and the physical executive nervous organism are essential to the manifestation of our inner states of consciousness," the present views of the nature of the connecting link, or causal relationship, between these two sets of phenomena are largely theoretical; and in examining them carefully we may find that our expression of them in words is a cloak for our ignorance rather than a statement of what has been definitely ascertained. Dr. Hyslop tries to map out the present extent of our actual knowledge.

After an introductory chapter, which deals with the general bearings of the subject, and gives a short account of the spiritualistic and materialistic theories of the relationship between mind and brain, Dr. Hyslop sketches the microscopical anatomy, chemistry, vascular supply, and lymphatic system of the brain. Two chapters deal with the scheme of the central nervous system (sensory paths and projection systems) and with the localisation of the mental faculties. Then taking up the psychological side, Dr. Hyslop discusses in succession sensation, perception, sensory perversions and hallucinations, and the different mental processes (attention, conception, judgment and memory); after which the feelings and emotions and the will, with their disorders, are dealt with. The last two chapters of the book review the factors of insanity, which Dr. Hyslop classifies in the first place as internal (such as inherited predisposition) and external (such as social environment); and in this section he refers at some length to the degeneration theories of Lombroso and others, and discusses the influence of the different periods of life, and of various bodily conditions and diseases, in producing mental disorder.

Throughout the book Dr. Hyslop's position is mainly that of a careful critic. It cannot be said that he brings forward much that is in itself actually new. Nevertheless his book is a most valuable and instructive one, and represents the outcome of much good work. It brings together in a condensed form the results of extensive and accurate reading in both the anatomico-physiological and purely psychological sides of the subject, and examines the views put forward by

leading writers in an independent and thoroughly fair spirit. Many of his readers will think that Dr. Hyslop is pessimistic, and urges almost too strongly the difficulty or impossibility of ever solving the question of the transition between nerve action and mental phenomena; and some of his conclusions will probably not command general acceptance. At the same time it is well to recognise the limits of our knowledge, and not to imagine that a theory giving a metaphorical explanation of what may take place constitutes knowledge of the real action. Dr. Hyslop has kept this steadily in view in the treatment of his subject. His book deserves to be carefully studied, and should find a place on the shelves of every asylum library.

Dégénérescence Sociale et Alcoolisme. Par le Docteur M. LEGRAIN. Paris, 1895.

In this volume Dr. Legrain follows up his study of the heredity of alcoholism, published in 1889 under the title *Hérédité et Alcoolisme*, with a statistical account of epilepsy, hysteria, obsessions and other neuroses, and of more general abnormalities, which mark the degeneracy of the eight or nine hundred children of drunkards whom he has examined. The joint efforts, he claims, give a sufficiently complete account of the relations of alcoholism, in ancestry and in progeny, to heredity. And his point of view throughout is the social rather than the scientific. For Dr. Legrain is a temperance reformer as well as a mental physician.

Having learned so much, we are prepared for a study of the question in its social aspects, such as will appeal to the politician, the magistrate, and the citizen. Nor are we disappointed.

In the first part of his essay Dr. Legrain studies the march of degeneration in the progeny of drunkards. And in reading this section we are disposed to question some of his judgments, and to conclude that his generalisations are too sweeping and his outlook both narrow and superficial.

He handles a most satisfactory abundance of evidence. But he does not seem to appreciate the more recent expositions of the laws of heredity, and he occasionally falls into the old error of mistaking a symptom for a disease. He seems to regard the alcoholism of the patients too much in the light of an initial cause. And we are disposed to question the wisdom of tracing much of a family's degeneration

to the alcoholism of its parent, whose vice we should rather regard as evidence of considerable degeneracy already begun. After observations upon 215 families, Dr. Legrain, speaking of the evil results of alcoholism as manifest in the first succeeding generation, says "we have found only a few imbeciles, and only a single idiot, in whose progenitors there existed any cerebral lesion other than alcoholism." The statistics of his observations upon the second and third generations furnish very striking data. Drunken orgies are a frequent matrimonial agency. Infant mortality, in such cases, is at a very high rate, still-births and miscarriages are the rule. The drunken state of parents at the period of conception is of great importance in determining disease in the offspring. Apparently, no single member of the third generation was observed (seven families traced) who did not labour under some incurable malady. Indeed, the "third generation seems to proclaim the almost complete extinction of the families" whose progenitors laboured under hereditary alcoholism.

In discussing the general question, the prophylaxis, the treatment, the social factors in the case, we meet with much with which English students of the drink problem have made us familiar—the love of excitement in modern times, the frequency of alcoholic temptation, bad liquor, the fanatical enthusiasm of a few reformers, the apathy of the bench. A few characteristic features of the French drink question are interesting. Chief of these is the industry of the "bouilleurs de cru," a corrupt and pernicious industry which has grown strong under the protection of an Act of 1875 which gave permission to everyone to distil from his own harvest a certain amount of alcohol for his own use, without declaring it, and free of excise duty.

Dr. Legrain is in favour of reducing the number of licenses, and we are not surprised. Exclusive of the 30,000 places in Paris licensed to retail alcoholic liquors, there was, in 1885, one for every 30-40 men in France; in the Department du Nord, one for every 14 men. He is also in favour of a heavy tax upon the manufacture of spurious alcohols, and would prevent the export of wholesome wines. He gives a sketch of the working of a compulsory home for inebriates, where they would be subjected to rigorous discipline, and whose officials, including the Medical Superintendent, must drink nothing stronger than weak tea. On being discharged patients would leave on probation, and

philanthropic societies would be responsible for their surveillance and moral regeneration. Medical men would commit patients to such retreats. Only magistrates could discharge them, after a period of not less than a year, and upon evidence furnished by the doctor. But the time has not yet come.

Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie, et l'Idiotie. Par BOURNEVILLE, Médecin de Bicêtre, Vol. xvi. Paris, 1896: aux Bureau du Progrès Médical; and FELIX ALCAN. Pages 250, with 31 figures and 8 plates. Price 7fr.

This is an unusually interesting number of an interesting series of Reports on the work done at the Bicêtre, and its allied institutions, by Dr. Bourneville and his colleagues. It treats not only of the strictly medical work, but of much that is "pedagogic" in methods of training mentally deficient children; and in the first division of the book we find an illustrated dissertation on the modes of primary instruction found appropriate in such cases. A plate, showing how the airing-courts are transformed into gardens, with beds of varying geometrical shapes, serving for open-air instruction, is suggestive of what might be done in the extension of out-door treatment in this country. It would appear that on the 31st December, 1895, 519 defective children were under treatment at the Bicêtre, of whom 494 were stated to be idiots, imbeciles, or epileptics, and 25 reputed "*non-aliénés*." Five were affected with deaf-mutism, eight with blindness, 54 were drivellers, and 81 hemiplegic. The admissions during the year had been 99, the discharges 79, and the deaths 24. In the table of causes of death (which is very complete), pulmonary tubercle is noted in 10 cases, and tubercle is suggested in some others. The question of the desirability of setting apart a separate department for tubercular cases, mooted in connection with some English institutions, might be worth trying at the Bicêtre. The absence of the thymus, and its weight when present, have been ascertained at all the autopsies made during 1895, also the weight of the thyroid gland (which does not appear to have been absent in any case). At the "Fondation Vallée" (also under Dr. Bourneville's direction) there seems to be overcrowding, as, originally intended for 100, it now contains 140 patients. During 1895 there were

six deaths, at least one of which appears to be from tubercle. It is proposed to add 100 beds to this establishment.

Another section of the Report deals with the subject of special classes for backward children, annexed to ordinary elementary schools. Bourneville recommends the creation of such classes in the various *arrondissements* of Paris, following the example set by the London School Board.

The second part of the Report is devoted to clinical and pathological observations, in which the relations of meningeal inflammations to idiocy and epilepsy are elucidated by careful autopsies. The histories of the cases are fully given, as well as the post-mortem appearances; and for those wishing to save themselves trouble there is a brief summary preceding each detailed case. In a case of epilepsy with localised cerebral atrophy, treatment by the "injections of Brown-Séquard" was tried, with the result of augmenting the fits. A case of microcephalic idiocy, in which double craniectomy had been performed at the age of eight by Lannelongue, is described as having displayed but "insignificant" mental improvement consecutive to the operation, while the post-mortem showed that there was complete ossification of the sagittal sutures, and it was noted that the breaches made in the craniectomies (one measuring 8 centimètres by $3\frac{1}{2}$) were filling up with new bone within three years of the operation. A case in which one central kidney only was found, with other malformations and disarrangements of the viscera, is interesting from the teratological point of view. But perhaps the most interesting, in view of recent discussions, are the three cases of sporadic cretinism (or, as Bourneville calls them, *myxædematous idiocy*) treated by thyroid ingestion, of whom portraits are given at successive stages of treatment. The patients were respectively 30, 20, and 14 years of age, and Bourneville observes that the inconveniences of the treatment (*e.g.*, excessive diminution of weight and elevation of temperature) were less marked with the younger cases. Considerable amelioration, mental and physical, resulted in each case, and of one it is remarked that the child gained three notes in the register of her voice! Elaborate charts, showing the variations of weight and of temperature during four months' treatment, are appended; and we may remark that the dosage—which is also shown graphically—is in excess of that customary in England, half a lobe being

commonly given by Bourneville, and occasionally a whole lobe of the thyroid of the sheep.

Some admirable full-sized representations of abnormal and diseased cerebral hemispheres (reproduced from photographs) close this volume, the perusal of which we cordially recommend to our readers.

Some Physiological Factors of the Neuroses of Childhood. By B. K. RACHFORD, M.D., Professor of Physiology and Clinician to Children's Clinic, Medical College of Ohio. Cincinnati: Robert Clarke Company, 1895. Price 1 dollar.

In this handy little book, got up in the best American style of typography, we find republished a series of papers by Dr. Rachford, which first appeared in the *Archives of Pediatrics*, together with some additional matter. In the subjects treated there is much to interest not only the pediatric, but the psychological physician. Defining the neuroses of childhood as "all local and general disorders which do not depend on known local pathological lesions of the nervous system," Dr. Rachford takes stock of the normal functions of nerve-cells, remarking certain physiological peculiarities of the nervous system of infancy and childhood. Amongst these he notes the morphological and functional immaturity of the infant's brain, and shows how it develops in function much more slowly than in weight and structure. He refers also to feebleness of inhibition of nerve-energy as an infantile characteristic, and to "lack of sensitiveness of the motor areas" as protecting against reflex neuroses, and producing lack of tone in the sphincter muscles. Abnormal conditions of heredity and environment may delay the functional development of the centres presiding over muscular tone, and at the same time increase the irritability of the reflex centres, thus leading to incontinence.

The instability of temperature in young children is explained by an enhanced excitability of the immature thermogenic centres, due to feebleness of the cortical thermo-inhibitory centres. Treating of heat-dissipating mechanism, the author argues that polypnoea is often a symptom of fever in childhood, and is nothing more than nature's attempt at heat-dissipation, though sometimes mistaken as indicating lung disease.

The most interesting chapter in the book is perhaps that which discusses autogenetic and bacterial toxins in their relation to nervous symptoms. Discussing auto-intoxication the author argues that uric acid and urea cannot by themselves produce nervous disease, though indeed uric acid in circulation may by its insolubility produce mechanical irritation of nerve endings. Uric acid has, however, been convicted of malignancy upon circumstantial evidence; and it is really the leukomains, such as xanthin, paraxanthin, and gerontin which are the efficient factors in producing migraine, epilepsy, puerperal and other eclampsias. Gastric neurosis produced by leukomains is often wrongly treated by morphia. Biliary toxæmia not unfrequently gives rise to convulsions in children. Bacterial toxins may act directly on the nerve elements, specially on the heat centres, thus producing high temperatures. Chronic intestinal toxæmia is not unfrequently associated ætiologically with hysteria, night terrors, neuralgia, headache, and convulsions, which may be combated by diet, cathartics, and intestinal antiseptics.

In treating of the condition of the blood as a factor of nervous disease the author points out that both arterial anæmia and venous congestion produce an excitable condition of the motor nerve centres, and tend to weaken the inhibitory centres, so that mere reflex excitation is apt to occur. A venous condition of the blood, resulting from a weak or crippled heart, explains (in part at least) the relation of heart affections to chorea and other neuroses. As regards impoverished conditions of the blood, Dr. Rachford is of opinion that it is *bad* blood, not *thin* blood, that is an important factor in producing neurotic disease in children. He lays special stress on the importance of a sufficient supply of calcium salts to maintain the normal irritability of nerve centres.

With regard to reflex irritation, it is pointed out how chronic peripheral irritation may produce morphological change in nerve centres, so that removal of the irritating cause may not at once relieve the nervous symptoms. Dr. Rachford concludes that reflex causes are more potent in producing neurotic disease in children and in girls than in men by virtue of immaturity of nervous centres in the first-named, and of more abundant reflex disturbance in the second.

In the concluding chapter, on excessive nerve activity, the

author discusses the risk of nervous strain and consequent neurotic disease, that besets children (especially those of bad heredity and indifferent physique) in the competition of school life. Early precocity is an abnormal condition in the human infant, and, if encouraged, may result in actual disease and permanent mental impairment. As to home education, it is Dr. Rachford's belief that "the nurse and the governess in the modern house are doing much to destroy the development of individuality in children," for too often their thinking is done for them, and there is little opportunity for the spontaneity and comradeship of childhood. In a few closing words the physiological importance of the physical, as opposed to the mental, development of children, is pointed out as worthy the practical attention of philanthropists.

Our readers will find in Dr. Rachford's book many original thoughts, and an absence of mere compilation which favourably distinguish it from some of the emanations of the American Press.

Fundamental Principles of the Metaphysics of Ethics. By IMMANUEL KANT. Translated by THOMAS KINGSMILL ABBOTT, B.D., Litt. D., Fellow of Trinity College, Dublin. [Extracted from *Kant's Critique of Practical Reason and other Works on the Theory of Ethics.*] London: Longmans, Green, and Co. Price 3s.

No review of Immanuel Kant's (1724-1804) works has occupied these pages since 1882—just a century after the *Critique of Pure Reason* was published—although there have since been several translations and monographs published upon the theories of this great master, who—in spite of a system of philosophy imposing and complex, based upon consciousness, hedged round with and supported by a ponderous array of logical axioms, rules, definitions, forms, and a phraseology both original and scholarly—continues to be looked upon as the greatest philosopher of modern times. Kant stands quite alone among German writers as having influenced the later attempts at ethical speculation amongst ourselves. Indeed, until the time of Kant but little was done in ethics by the great Continental thinkers. Descartes has only a few allusions to the subject, and the *Ethics* of Spinoza is chiefly a work of speculative philosophy. Kant

found himself unable to accept the metaphysical dogmatism of the Leibnitzian (and Wolffian) school of innate ideas on the one hand, and the general philosophical scepticism of Hume on the other, so that in 1781 he wrote the memorable *Critique of Pure Reason*, then in his fifty-seventh year, a memoir of which but few copies were sold for the first six years, when interest was excited in its favour, and three editions of it were disposed of in a very short time. The basis of his treatise was the inherence in the mind of certain principles of knowledge before all experience and which he denominated *a priori*, the word "*pure*" being applied to designate his meaning. He agreed with Leibnitz in taking *necessity* and *universality* as the marks of cognitions never to be attained to, or explained by experience. These cognitions, not merely verbal or *analytic* (where the predicate sets forth the implication of the subject), but *synthetic*, or real (in which there is an extension of knowledge), are found in abundance in Pure Mathematics— $2 + 2 = 4$, in Pure Physics—Action and Reaction are always equal and contrary—while the whole of traditional Metaphysics is made up of such. On the other hand, whilst Hume had looked upon Causality as the custom of sequence among the impressions of sense, and had founded his scepticism upon the untrustworthiness of such a purely subjective notion, Kant accepted the subjective origin of Causality in "forms" requiring to be supplemented by the "matter" of experience. The mind, upon Kant's view, has no sort of knowledge antecedent to and independent of experience. It only has the "forms" as the moulds into which empirical elements, by way of the senses, are made to run, and unless the "matter" of experience is supplied there is no knowledge of any kind possible. When the "matter" is provided, and the "forms" are applied, the mind is even then not bound down to its particular experiences, but can conceive and utter universal and necessary (synthetic) truths that no mere experience could ever give. Such is Kant's doctrine, and he informs us his great object was to overthrow the scepticism of Hume. His main object in his philosophy is to show that we have no knowledge of anything but that which is purely phenomenal or sensational. We have no knowledge of things in themselves, the *noumena* of the universe are completely hidden from view. We may *believe* there is something external to phenomena, something which produces them, but we can give no proof whatever of this reality and must acquiesce in this conclusion. This reason-

ing led Cousin to remark that after having commenced with a system of idealism, Kant ended with scepticism. The materials of *pure* or *a priori* knowledge are supplied according to Kant through the three departments of (a) sense, (b) understanding or intelligence, and (c) reason. The impressions of (a) sense—*internal*—such as joy, pleasure, pain, and *external*—sight, &c., are *received* as empirical “matter” into certain *pure* or *a priori* “forms,” known as “Forms of Intuition.” These are *space* and *time*, without which empirical sensations would be impossible. (a) *Sense* delivers up its presentations in *space* and *time* to the (b) understanding, whose office it is to introduce into them unity and system. All the “materials” of the (a) *senses* are generalised by (b) the understanding into “forms” of conception according to what Kant calls the “Categories” of the understanding (to borrow an Aristotelian phrase). These “Categories,” viz., (i.) Quality; (ii.) Quantity; (iii.) Relation; and (iv.) Modality, bind the understanding with all external objects, and without them Kant asserts that no proper connection of the “materials” of *sense* is possible, as they are the constant and invariable condition of all mental conceptions. The (b) *understanding* or *pure intelligence* is also the source of all the judgments we form of external things, and our judgments he divides into *analytical*—a kind of experimental sketch, the result of the separation of the different qualities or properties of anything, as, a square has four sides—and *synthetical*, being independent of experience and universal in their nature. As *pure sensibility* produces sensations, and *pure understanding* or *intellect* moulds these into conceptions, so (c) *pure reason*, the highest faculty, methodises these into comprehensive truths. According to Kant, *pure reason*, the faculty of ideas, has three great forms or attributes, viz. (i.) *absolute unity*, representing the universe, embracing the entire mass of all real or possible knowledge, and forming the science of cosmology; (ii.) *totality*, representing the soul, embracing our feelings, emotions, passions, and constituting our moral and intellectual nature, forming the science of Psychology; and (iii.) *causation*, involving the conditions or forms of existence of the material world and of human nature. This perfect and absolute unity of nature and essence is God. All the reasonings relative to the mode of being, the attributes, and the moral nature, of the Deity form Theology. These three great branches of metaphysics Kant maintains to have their origin in human reason

irrespective of all experience, and to control the working of the understanding as applied to experience.

As regards the moral and religious principle of our nature, the three sections forming the volume before us furnish ample evidence of Kant's peculiar phraseology. The first points out that nothing in the world can without qualification be called good, except *Will*. The circumstance that the Will can or cannot be executed does not matter; its value is independent of the utility or fruitlessness of it. *Will* is subjected to Reason, which is a practical faculty, and whose function it is to produce a *Will* good in itself. It is laid down that an action is not allowed to have true moral value unless done in the abeyance or absence of the natural inclination prompting to it. Also that the moral value of an action done from duty does not lie in the intention of it, but in the *maxim* that determines it, *i.e.*, in the *principle of Volition*. It is urged that Duty is the necessity of an action out of respect for Law, and that conformity to Law in general is the one principle of Volition. His standard of a morally good action is the possibility of its being universally extended for all rational beings, or, obversely, the action is bad that cannot be, or at least cannot be wished to be, turned into a Universal Law. The second section goes on to show that duty and morality are not to be learnt from experience, that no act can be proved by experience to be absolutely moral according to Kant, *i.e.*, done solely from regard to duty to the exclusion of all inclination. The principles of morality are considered to be *a priori* and rational—without empirical motives. Rational beings are stated to act upon principles, which are a conceived idea of laws. This involves a Will or Practical Reason. It is here that *constraint* or *command*, expressed in the formula *Imperative*, is discussed, with the significant *ought*. A will perfectly good knows no *Ought*. Imperatives are only for an imperfect will, such as is the human. The different Imperatives are shown, *viz.*, the Categorical with its apodeictical principles, and the Hypothetical with its problematical or assertory, as the end is possible or real. The great Kantian maxim *Act as if the maxim of your action ought by your will to become the universal law of nature* is here enforced. The law of duty is to be self-imposed and universal. So act that your conduct might be a law to all beings. The *Autonomy of the Will* is here considered, as also is the *Realm of Ends*, with its *price* or its *dignity*. Our duty to man and our Maker is noted by

an examination of all the motives, impulses, and aspirations of the soul based upon moral laws which are shown to exist *a priori* in the mind, and which are independent of the thinking principle. In this way are discovered the nature of duty and of right, what is necessary and what is expedient, what is good and what is bad. Section three deals with the *freedom of Will* following upon the Categorical Imperative of duty, which, as it enjoins a law of duty, must provide a final end of action. The apprehension of what is morally right is an affair of Reason, the only element of Feeling is an added Sentiment of Awe or respect for the law that Reason imposes, this being a law not only for the person himself, but at the same time for every rational agent. There being this law the absolutely good Will must be autonomous, i.e., must without motive or interest lay commands upon itself which, as stated, must be laws for all rational beings. In the conception of the Supreme Good, as the final end of action, as man is a sentient as well as a rational being, Happiness as well as Perfect Virtue must enter into the Supreme Good, and as virtue out of respect for law is all that is attainable in life, Immortality and God have to be postulated. As Immortality implies an infinite progression, and it is necessary to render possible the attainment of moral perfection or Holiness, which means a complete accommodation of the will to the Moral Law, so the existence of a Deity implies Happiness, which means an existence having everything in conjunction with the wish and Will, a supreme, universal, and infinite existence. To students of Kant, upon whom is imposed the duty of mastering such monuments of thought as have not been left since the days of Aristotle, we commend this little volume as a conscientious and painstaking translation, and we are glad to refer to it.

On the Relation of Diseases of the Spinal Cord to the Distribution and Lesions of the Spinal Blood-Vessels. By R. T. WILLIAMSON, M.D. (Lond.), M.R.C.P., Medical Registrar, Royal Infirmary, and Assistant in Medicine, Owens College, Manchester; pp. 43. London: H. K. Lewis, 1895.

This pamphlet is a collective reprint of papers which were published in the *Medical Chronicle* in 1894 and 1895. It is an interesting and suggestive attempt to more definitely

correlate spinal diseases with the distribution and lesions of the blood-vessels of the spinal cord.

The arrangement and origin of these vessels are first considered; and the writer points out that a transverse section of the cord may be mapped out into certain districts, according to the arterial supply. Attention is drawn to the comparatively difficult course the blood has to travel to reach the lower part of the spinal cord; this point is again specially referred to in the section dealing with *Locomotor Ataxia*. Allusion is also made to the possible pathological importance of the absence of true lymphatics in the cord, their place being taken by perivascular channels.

The writer then proceeds to discuss, under fifteen sections, several of the more common spinal diseases. His observations are based upon cases and material of his own, together with cases selected from recent literature on the subject. He describes and figures the distribution of the various lesions found, and demonstrates that they frequently correspond to one or other of the areas above referred to; and argues with much force that a vascular lesion is much more often the primary cause of the disease than is usually believed to be the case.

Dr. Williamson has condensed much thought and many observations into a few pages, and we welcome this pamphlet as a praiseworthy attempt in the right direction.

Eléments de Psychologie Humaine. Par J. J. VAN BIERVLIET.
Paris: Alcan, 1895; pp. 317. Price 8 francs.

Prof. van Biervliet, of Ghent, is probably the chief Belgian representative of the "new psychology." He has made various original investigations, working with Wundt at Leipzig and collaborating with Binet in *L'Année Psychologique*. Such a work as the present, therefore, was bound to reveal a high degree of competency.

It is, however, somewhat disappointing. Representing in substance the course of lectures delivered to the professor's students at Ghent, it has the merits and defects which commonly belong to such courses; it is clearly written, with insistence on rather formal subdivisions of the subject, while debatable matters, together with references, are systematically avoided. Such books are, not necessarily in any disparaging sense, perfunctory; they do not spring from any

vital interest in the subject, and they require to be written with rare power to arouse any vital interest in their readers.

Nearly half the volume is occupied with anatomy and physiology. An opening chapter on the cell is followed by a brief survey of the skeleton and other tissues and a more detailed description of the organs of sense. It is now becoming usual to omit such descriptions in books on psychology, and the wisdom of doing so is well illustrated by this volume. A knowledge of anatomy and physiology is part of the essential prolegomena to all knowledge of psychology, but it cannot, strictly speaking, be said to form part even of the elements of psychology. The result in this book has been that Prof. van Biervliet has found himself with no space left to deal, save in the briefest manner, with the results of experimental work, which now form so large and important a part of psychology. Dr. Scripture's little book, *Thinking, Feeling, Doing*, with all its many defects, succeeds in giving a better and more symmetrical account of the present position of the science.

La Psychologie des Sentiments. Par TH. RIBOT. Paris : Alcan, 1896. Pp. 443. Price 7frs. 50.

Prof. Ribot, the editor of the *Revue Philosophique*, and a veteran whose activity began many years ago, is the acknowledged leader of the younger experimental school of psychologists in France. He is not a man of the laboratory; his name is not associated with any physiological investigations; he is not even a fertile inventor of theories. He is chiefly known only as the author of books, which with admirable knowledge, judgment, and lucidity, summarise and focus the work and opinions of other people. Of these books the latest, which is now before us, and which deals with the feelings and emotions (we scarcely have an adequate equivalent for the French "sentiments"), is certainly one of the most important; it discusses questions of the first moment and of the greatest interest, questions, moreover, which, until James and Lange pointed out a new method of approaching them, had mostly been avoided by scientific psychologists. In dealing with these questions, Prof. Ribot displays a remarkable instinct for tracing out the "go" of the psychic mechanism, bringing every argument swiftly to a point while avoiding superfluity, and presenting the whole

in the broadest, simplest, and most charming manner; though it may be added that the style occasionally becomes somewhat condensed and broken, suggesting lecture-notes. Such a book enables us to understand how a writer who is at once so judicial and so bold in accepting some of the most recent points of view is gladly hailed as a leader of the younger school, although for the most part the experimental psychologist is extremely contemptuous of what he calls the "arm-chair psychologist."

Before long the English reader will have an opportunity of studying this work, with all the attention it deserves, in a translated version; in the meanwhile a few remarks may be made as to the general scope and standpoint of the book.

In the preface Prof. Ribot, after referring to the state of confusion and neglect in which the psychological study of the feelings still lies, proceeds to arrange the theories now in the field into two schools—the *intellectualist* school and the *physiological* school. The first regards feelings as "confused intelligence," as modes or functions of knowledge; the second regards them as primitive, not reducible to intelligence but related to biological conditions. Ribot considers Herbart and the German school generally as the representatives of the intellectualist school, while Bain, Spencer, Maudsley, James, Lange, etc., represent the physiological school. This statement of the matter is no doubt correct in the main, but if the author were treating his subject historically (a task which he throughout disclaims) many qualifications would be necessary. Thus it seems doubtful whether all the English psychologists named can be put decisively into the physiological school. It is not clear, for instance, that Spencer's *Principles of Psychology* entitle him to this place, and the matter is made still more doubtful by an unpublished letter of Mr. Spencer's, in the possession of the present reviewer, written in answer to a statement of the "confused intelligence" theory of emotion, which, Mr. Spencer writes, "I conceive to be a part of the truth." He adds, "joined with the dimly aroused association of ideas derived from the experiences of the individual, I hold that the body of the emotion consists more largely of the inherited associations of experiences and still more vague states of consciousness which result from excitement of them." It is evident that Mr. Spencer's evolutionary standpoint does not necessarily commit him either to the one or to the other

school, though it would probably fit in better with the physiological school. The question of a truly physiological school had not arisen until James and Lange, twelve years ago, asked the important question whether emotion arose in the mind or in the body. Wundt, following the German tradition, has placed his immense authority on the side of those who assert that it arises in the mind; the Americans, influenced by Wundt, have, though with many exceptions, taken the same side; English psychologists have, for the most part, judiciously placed a leg on each side of the stile. Prof. Ribot is the first psychologist of unquestionable authority, writing since the question was first clearly posed, who has definitely and decisively ranged himself on the side of James and Lange. Even apart from the characteristically lucid and comprehensive treatment, this fact alone would serve to make the volume before us a work of the first importance.

Taking a somewhat broader view, it may be said that the kernel of the book lies in a statement contained in the concluding chapter. "The fundamental idea of this book has been to establish that the basis of the life of the feelings is appetite or its contrary, that is to say movements or arrest of movements; that at its root it is an impulse, an act in the nascent or complete form, independent of intelligence, which has nothing whatever to do with it, and may not even be present." And he concludes with a quotation from Spinoza: "Appetite is the very essence of the man. . . . We do not desire a thing because it is good, but we judge that it is good because appetite and desire carry us towards it."

The book is divided into two parts, the first studying the more general manifestations of the feelings, pleasure and pain (normal and morbid), the general nature of emotion, and the emotional memory; while the second part deals with the special emotions in detail.

One of the chief questions discussed in the first part is the nature of pain. After examining the various phenomena associated with pain (cardiac, respiratory, nutritive, motor, etc.), the author proceeds to argue that pain is not a cause but a symptom, the real cause being a stimulus (external or internal) which manifests itself on the one hand in consciousness as pain, and on the other in the above-mentioned physical phenomena. Regarded as a state of consciousness, pain is only an index revealing to the individual his own disorganisation; it is thus an error to regard pain (or pleasure)

as a fundamental element of feeling. Pain as an element of consciousness is separable and independent; it is the result of summation. These points are illustrated by evidence supplied by morbid and especially artificial analgesia. Pushing the question further home the author proceeds to inquire what pain essentially is. Reviewing the evidence in favour of special pain-nerves, with Rutgers Marshall he rejects it. Ribot is not, however, satisfied with the way in which the opposite theory—the *quale* theory—is frequently put. He is himself inclined to lean to Oppenheimer's chemical theory of the genesis of pain (briefly stated in this Journal in "Retrospect of Psychology," January, 1896), though he points out that at present it is only a theory. Melancholia is dealt with as an example of morbid painful emotion, and on this subject Ribot is mainly in harmony with Dumas.

Chapter VII., dealing with "the nature of emotion," is also of capital importance in displaying the author's standpoint. He here sets forth the hypothesis of James and Lange, and while fully accepting it in substance he differs from it in form, because while they imply a dualistic attitude his attitude is monistic. In developing the theory he goes farther than James, who somewhat incautiously appeared to restrict it to "coarser" emotions. Ribot shows that, for instance, religious emotion has a physiological basis, as indeed the literature of mysticism has always borne witness, and he develops in an interesting manner the physiological basis of musical emotion.

Part II. is devoted to "Special Psychology," and is regarded by the author as the most important part of the book, since it leaves generalities behind and attacks the more concrete question. It is very full and varied, and each chapter is already so condensed that it is not easy to summarise conclusions. The instinct of preservation is dealt with first in its physiological form (with a brief but interesting study of disgust), and then in its defensive form as fear—including its morbid shapes (the phobias)—and finally in the offensive form, as anger. We then pass on to sympathy, which the author regards as having an innate basis; and chapters follow on the "self-feelings" and on the sexual instinct. We are then taken from the simple to the composite emotions, the complexity of the latter being due partly to evolution, partly to arrest of development, partly to combination (of which last shame is given as an example), these

causes acting either separately or together. Then the social and moral sentiments are dealt with, the religious emotions, the æsthetic and intellectual feelings, etc., in each case attention being given not only to the normal forms but also to the abnormal and morbid deviations. In all these chapters—although the physiological explanation is throughout developed to a much greater extent than James and Lange have themselves developed it—no attempt is made to force the facts to fit a fore-ordained theory or conclusion. The present state of the question is presented in its various sides, and the matter left open where no result can yet be said to be reached; thus, for instance, the psychology of laughter and the comic, an apparently simple matter which has led to much dispute, is here fully discussed, but without the attainment of any definite solution. The concluding chapters are chiefly devoted to a study of the varieties of character and temperament.

While it cannot, perhaps, be said that this wide-ranging and deeply interesting investigation into the nature of emotion has brought many really new elements into the questions discussed, it certainly places this very large group of problems in a clearer light than it has ever been placed before, and furnishes a sound and helpful point of departure for future research.

La Psychologie du Raisonnement: Recherches Expérimentales par l'Hypnotisme. Deuxième édition. Par A. BINET. Paris: Alcan, 1896. Pp. 171. Price, 2fr. 50.

This book (as might have been more clearly shown) is the second edition, apparently unchanged, of a work published some ten years ago. Many of its ideas and suggestions have since become familiar to psychologists, but as the book has never been translated into English, nor received notice in this Journal, it may be useful to indicate its main conclusions.

The sting in the title of the book lies in its tail. The reasoning faculty has long been a subject for grave disquisition; the familiar syllogism, "All men are mortal: Socrates is a man: therefore Socrates is mortal," has not been found so simple as it looks. Yet our forefathers would indeed have been surprised could they have known that their grandchildren would propose to investigate the most dignified human faculty by the methods of Mesmer. This

however, is what the director of the Sorbonne Laboratory has here attempted to do. The hypnotic experiments on which the book is partly founded were carried on in conjunction with Dr. Féré. The two authors were jointly engaged in studying hallucinations, and the present book (dedicated to Dr. Féré) is closely related to those studies. The syllogism, Dr. Binet argues, is the result of a fusion of images, and is really produced in the same way as a hallucination. Reasoning is the most fundamental and instinctive of mental states; the mind is essentially "a thing that reasons," and that is why it can be experimentally investigated in the hypnotic state. From the psychological standpoint, Binet believes, "reasoning is the establishment of association between two states of consciousness, by means of an intermediate state of consciousness which resembles the first, is associated with the second, and by fusing with the first associates it with the second."

There are five chapters in the book:—"The Definition of Perception," "Images," "Reasoning in Perceptions," "The Mechanism of Reasoning," and "Conclusions." It is difficult to summarise the whole argument and the manifold facts and considerations by which it is supported. It is a book to be read, and one that will be found full of suggestion. It is, moreover, of interest to the alienist, since it brings the phenomena of reason on to ground which belongs at least as much to him as to the normal psychologist.

Developing the proposition that all perception may be regarded as a succession of three images, Binet finds that perception contains all the elements of a syllogism; "perception and logical reasoning are only the two extremes of a long series of phenomena;" the same mechanism is involved in all. Reasoning may be regarded as a kind of supplementary sense, a sort of logical vision, filling the spaces left by real vision, and constructing within our minds a new universe on the model of the larger universe. But at bottom all reasoning is, on analysis, nothing but a succession of these images, a kind of synthesis or crystallisation of images. In this, however, reasoning is by no means peculiar, and Binet briefly indicates how the same may be said of other normal and abnormal mental processes. He suggests that the theory of evolution renders this unity of composition explicable. "In short, all the forms of mental activity can be reduced to a single form—reasoning. Psychic life is a perpetual conclusion."

Le Sommeil: Pathologie, Physiologie, Hygiène, Psychologie.
Par MARIE DE MANACÉINE. Paris: Masson, 1896.
Pp. 358.

This is a translation from a recent Russian book by a lady whose name is known in connection with numerous interesting investigations in physiology and psychology. As the title indicates, the whole domain of sleep is covered, the work consisting of four long chapters, of which the first deals with the physiology of the subject, the second with its pathology, the third its hygiene, the fourth with its psychology—that is to say, with dream-life. The book is written in a popular and attractive style, but the author is very competently equipped for her task, not only by her own original work, but by her wide acquaintance with the international literature of the subject. On many points of detail it is possible to differ from Mme. de Manacéine. She puts forth one or two theories that are insufficiently supported, as when she regards excessive sleep as a cause of anæmia by virtue of the albuminuria it sometimes produces. And while she points out, very ingeniously, many of the evils of excessive indulgence in sleep, she does not equally insist on the evils of an insufficient amount. But on the whole it may be said that we have no such attractive and comprehensive study of sleep in English as this of Mme. de Manacéine's, and it is satisfactory to learn that it will shortly appear in an English dress.

Der Geborene Verbrecher. Von Dr. E. BLEULER. München: Lehmann, 1896. Pp. 89.

Following the example of so many other German alienists, Dr. Bleuler in this little book enters the arena of criminal anthropology. Unlike most of his predecessors, he brings forward no solid contribution of new facts. His pamphlet is merely intended to be "a critical study." As such, however, it is admirable, being simple, clear, and well-reasoned throughout. The criticisms of the Italian school are acute, but Dr. Bleuler tries to avoid the common error of superficial reasoners, who, as the Germans say, empty out the child with the bath. He thrusts aside at once those non-essential points in Lombroso's teaching which have often caused so much fruitless discussion. "The essential point in Lom-

broso's doctrine is that the criminal, in anthropological respects, differs psychically and physically from the average type of honest and healthy men." He points out—though he is not altogether the first to do so—that even the work of opponents (Baer's, for instance) has really lent support to Lombroso's main thesis. In many cases, indeed, his opponents have strengthened his case by replacing his sometimes hasty and careless observations by fresh facts more carefully observed. The main point is that criminality is not exclusively caused by extra-uterine factors, that it is to some extent *endogenous*, and this is now admitted as clearly by Lombroso's opponents—Baer, Näcke, Kirn, etc.—as by Lombroso himself. "Lombroso's great service," Dr. Bleuler continues, "lies not in the creation of a new idea, but in the attempt to study the criminal in general, anthropologically and biologically, and in fearlessly drawing the consequences of his observations; finally, and not least, by his energy and enthusiasm he has given an unprecedented impetus to this branch of anthropology and sociology, and won attention to his teaching even among ordinary practical men."

In proceeding to expound Lombroso's main thesis, Dr. Bleuler at the same time points out the contradictions, hasty generalisations, and questionable facts by which they are often supported. He thus explains the meaning of the "criminal type," remarking that even racial types are fluid, that we can say positively of no German that he might not be an Englishman, or of no Englishman that he might not be a German. "Lombroso means by 'criminal type' nothing more than that born criminals, regarded as a class, exhibit certain physical and mental anomalies in greater number and in higher degree than average normal men." Lombroso's position is thus in no degree injured by showing that any or all anomalies are found in the honest. Bleuler does not agree with Lombroso that particular anomalies are specially frequent among criminals. Nor does he regard the criminal as an atavistic phenomenon.

The author further discusses the question of moral insanity, pointing out that there is no question as to the reality of the phenomenon, but merely a question of nomenclature. Where one sees a "morally insane" person, another sees a "congenital criminal," a third a person who is healthy but "vicious." To settle the question it must be stated differently. And against those who assert that there can

be no congenital moral defect or criminality, because morality is not congenital, he acutely remarks: "This is as much as to say that because speech is not congenital there can be no congenital mutism."

Many other points in the theory and practice of criminal anthropology are briefly discussed, and the pamphlet is altogether a pregnant and able contribution to a question of increasing actuality.

It is said that a Neapolitan gentleman once fought thirteen duels in defence of his conviction that Tasso is a greater poet than Ariosto. In the last he was mortally wounded, and with his expiring breath he was heard to murmur: "And to think that I have never read either Tasso or Ariosto!" It is to be feared that many persons who are valiant on the platform or in the press concerning criminal anthropology are in the same case, and have never read either Lombroso or Baer. If they wish to retain that heroic attitude they may find this clear and condensed little book of some service.

La Contagion du Meurtre: Etude d'Anthropologie Criminelle.
Par Dr. PAUL AUBREY. Paris: Alcan, 1896. Pp. 308.
Price 5 frs.

This is the third edition of a study of the influence of suggestion and imitation in producing crimes of violence which attracted considerable attention when it first appeared some years ago. The new edition has been thoroughly remodelled, revised and enlarged, and in its present form may be considered a complete and up-to-date account of the matter.

Part I. is concerned with the chief factors of the contagion of murder—family life in common, the spectacle of executions, and the press—a chapter being devoted to each.

Part II. deals with special forms of this contagion. The first place is given to the narration of cases concerned with vitriol-throwing and the revolver, which have occupied a large place in the records of French criminality. Chapters follow on poisoning, infanticide, abortion, multiple murders, rape followed by murder, and murder followed by mutilation. In the last-named chapter the author—with reference to the case of "Jack the Ripper," to which he gives pre-

eminence—is good enough to observe that the English, who pride themselves on their superiority in every department, may certainly claim to hold the record in criminal *dépeçage*. There are interesting chapters on the duel and on suicide, in both of which contagion plays a large part, and Dr. Aubrey (who has indeed published a study of criminality during the seventeenth and eighteenth centuries in Brittany) shows not only a wide knowledge of contemporary criminality but also of its historical aspects.

Part III. discusses the subject with reference to its epidemic and endemic characters, dealing with great social movements, the crimes of mobs, lynching, war, regicide, anarchism; there is also a chapter on the special character of murder in Corsica.

While the subject of this book has considerable psychological interest, it can scarcely be said that its practical importance is great, save in so far as it helps us to realise a leading factor in the etiology of criminality. Suggestion acts most powerfully on the unstable and mentally weak, but the realisation of this fact scarcely enables us to work towards its prevention. Dr. Aubrey advocates the suppression in the newspapers of information concerning criminal acts, in this following Moreau of Tours, by whom he was inspired to write the present volume, but the proposal is not likely to find much support. Even Dr. Corre, the eminent criminal anthropologist who has written an introduction for this new edition of Dr. Aubrey's book, fails to follow him here. In England such a method of combating crime is likely to meet with even less favour than in France, as possibly leading to greater evils than those it seeks to cure. We cannot remould society for the benefit of our weaker brethren. All that can be done would seem to be to learn to detect in our schools, as early as possible, the unstable elements in the community, to exercise a rational hygiene with respect to them, and if necessary to remove them out of the way of danger.

PART III.—PSYCHOLOGICAL RETROSPECT.

AMERICAN.

By C. Hubert Bond, M.D., B.Sc.

In the *Journal of Nervous and Mental Disease*, June, July, and August, 1896, an interesting case of "Chorea fatal in a girl thirteen and a half years old" is reported by Dr. F. R. Fry. When first seen by him, five days before the fatal termination, choreic movements had existed for six weeks. They were of the usual type, but very severe, and involved the face, neck, trunk, and extremities, all about equally. Articulation was very difficult. Mental symptoms were never prominent; this is noteworthy, as frequently in fatal cases of *chorea gravis* the immediate cause of death is the intensity of the nervous symptoms. Though once or twice there were transient illusions, on the whole the sensorium was clear. During the last few days the temperature gradually rose, eventually reaching 105.2° F. She had then become delirious, and the movements were somewhat subsiding. Death occurred a few hours later. Throughout the case there was no evidence of complications of any kind. It is to be regretted that no post-mortem examination was permitted. A sister of the father is stated to have succumbed to a similar attack of chorea.

In a paper read by Dr. Noyes, "Sporadic Cretinism" is discussed. The effect of heredity, he stated, might be manifested in three ways, viz. :—(1) In a congenital local defect; (2) in a defect of growth; and (3) in a defect in the general vitality. Recent epidemics had shown that heredity was the chief cause of sporadic cretinism. Only those whose parents had goitre seemed to develop cretinism; that is to say, that those with goitres were not cretins, but cretinism appeared in the next generation. The etiology of the sporadic is even more obscure than that of the epidemic form. Several of the reported cases have been the first children of quite young parents; one or both of the parents were apt to be neurotic; there was often a marked alcoholic taint; other children in the family betrayed neurotic stigmata. The symptoms of cretinism were to be explained as a result of a myxœdematous process in the undeveloped tissues of the infant.

Dr. F. Peterson showed a child which, now at the age of twenty-seven months, must be considered in every respect an apparently normal one. When aged eighteen months he was a well-marked example of sporadic cretinism, with a small and hard thyroid gland, though the cretinous condition had not yet advanced far. Six weeks' treatment by one grain of thyroid extract daily was sufficient to produce a marked change for the better in the child's appearance; and seven and a half months later he did not differ

from an average child of the same age. The treatment might require to be continued indefinitely.

The "Nature and Treatment of Exophthalmic Goitre" was the subject of a discussion opened by Dr. M. A. Starr. He contrasted the features of this disease with myxœdema, and, among other points, he stated that, while the subjects of the latter are particularly dull and apathetic, patients with Graves' disease are characteristically alert and active and intensely emotional—their mental state, in exceptional cases, even being one of acute mania. He urged the theory that the disease is due to hyper-activity of the thyroid gland, and said that a reduction of its secretion to a normal amount would result in a cure—hence, possibly, the explanation of the beneficial use of belladonna. The mental condition of the patient exerted a marked influence on the activity of the thyroid gland—hence the value of the "rest-cure." In his experience glycono-phosphate of sodium, in doses of twenty grains three times a day, proved useful in a number of cases. The consensus of opinion now seemed to be that thyroid and thymus extracts are of more harm than value in the treatment of exophthalmic goitre. In cases fatal after extirpation of the thyroid gland, death has been due not to sepsis, but to sudden poisoning of the system by an absorption of thyroid juice during the operation; and patients themselves have observed that manipulation of the gland is liable to increase the symptoms of the disease.

Dr. Clara Barrus contributes a paper on "Insanity in Young Women," based on an analysis of 121 insane girls and young women, whose ages ranged from 11 to 35. In 112 instances the initial attack, or the beginning of the present one, occurred before the age of 26. She points out that owing to the peculiar contradictoriness and uncertainty characterising adolescent insanity—rapid alternations of mania and melancholia being seen in the same individual without the distinctly marked cycle of *folie circulaire*—classification of such cases is not easy. Maniacal cases were rather more than double the number of melancholic ones. Insanity among the relatives was acknowledged in 50 per cent. of the cases, insane mothers being slightly more numerous than insane fathers. Among accompanying bodily diseases noted on admission, of the 45 patients examined, gynæcological abnormalities were present in 35 instances. They were mostly of the nature of cervical erosions and flexions, and did not give rise to conspicuous symptoms. The relation of menstruation to insanity, or *vice versâ*, was hard to determine. In several of the cases puberty had been postponed till the eighteenth or twentieth years. In many, slight bodily deformities, asymmetries and other neurotic stigmata were to be observed. The writer pertinently suggests that these, besides indicating a neuropathic diathesis, must form constant sources of annoyance to those thus afflicted, making them envious, and sooner or later suspicious, of their more favoured

playmates, and so help to precipitate an attack of insanity. The recoveries among these cases of adolescent insanity were made, in most instances, in from six to twelve months. In conclusion the writer believes that a deeper inquiry into the tendencies and environments of such cases would help us to ward off from other neurotic young women attacks of adolescent insanity.

In a most interesting article on "Scleroderma," Professor Dercum argues with much force that its right place in nosology is among diseases of the nervous system, and that it is a trophic affection as much as myxœdema and acromegaly. He describes with considerable detail three marked examples of it. The first occurred in a man, aged 43, who had met with a severe injury to his head shortly before, followed by persistent occipital headache. Symptoms of scleroderma were noted about four months after the injury. He was also markedly asthenic, and exhibited extreme mental depression. He himself noticed that he had become very irritable, easily excited, and unable to do his work as well as formerly. He complained of tinnitus. An exaggeration of the knee-reflex was present. The blood was found to contain peptone, and stress is laid on this as indicative of serious disturbance of the normal metabolism. The second example was that of a woman, aged 31, in whom signs of scleroderma developed very soon after a severe fright. No distinct mental symptoms were present in this case, however, but general weakness was pronounced, and at one time she was exceedingly neurasthenic. Pains of various kinds were a marked feature, referred both to the joints and to the nerves, suggesting neuritis. Various trophic changes were visible. The skin of the pulp of the fingers and nails became discoloured, and also very sensitive, and on the latter ridges developed. A deep ulcer showed itself at the base of the occiput, preceded by severe neuralgic pain there, and there were ulcers to be seen over the phalangeal joints. Changes in the structure of the joint cartilages (proved by Roentgenographs) produced marked sclerodactyle. The blood of this patient did not contain peptone, but the leucocytes were diminished in number, and of them the proportion of mononuclear ones was much too high, as also was the case in the male patient. The third example was a woman, aged 38. In her case there was no special nervous shock immediately antedating the development of scleroderma, but she had worked in an ice-house for a number of years, and the parts of the skin specially involved were just those which were exposed to the cold of the refrigerator. In addition to the ordinary features of the disease marked atrophic changes occurred in the fingers, evidently accompanied by disappearance of bone, and resulting in a great degree of contracture, though the joints were not stiff. Neuralgic pains were absent, but irregularly six weeks' treatment with strychnine was pronounced. The knee-reflex was sufficient to produce a start, but much more sensitive to cold, and the appearance; and severely distinctly cyanotic. During the course of

the disease she became pregnant, and was delivered of a healthy child, and during the pregnancy the thyroid gland was greatly enlarged. The urine in this and the previous case was greatly deficient in urea, while in the first patient the output of total solids was unusually high. Dercum then summarises the general symptomatology of scleroderma, and discusses the theories at present in vogue regarding it. On the side of the nervous system we find hypochondriasis, hysteria, and melancholia; also insomnia, giddiness, and neuralgia. Many disturbances of sensation have been noted. Chorea, tremors, spasms, ataxia, inequality of pupils, and even symptoms of Graves' disease, may appear. The great variety of nervous phenomena, and the fact that no one of them is always present, indicate that many are unessential in character, but the fact that nervous symptoms of one kind or another are usually present indicates that the nervous system is more or less involved. The single fact that the infiltration of the tissues is not necessarily progressive, but sometimes recurs, shows that some process other than a primary sclerosis is at work.

"The Functions of the Neuron" is the title of Professor Dercum's Presidential Address to the American Neurological Association. In it he deprecates a growing tendency on the part of some observers to misconstrue the structure of the nervous system, and to misinterpret the truths which that structure teaches. He states that there has been a tendency of late to under-estimate the importance of the nerve-cells, one theory being that they are mere watering and feeding places, and not places for renewing nerve-activity, and that impulses are capable of conveyance from processes to processes without passing through the nerve-cells themselves. He regards this view as untenable, and wholly opposed to the fundamental principles of biology, and believes that nothing but hopeless confusion of function could result from it. Such facts as we do possess, he opines, are directly opposed to such a diffusion of nervous energy. The comparatively recent discoveries of Golgi, Ramon y Cajal, and Van Gehuchten are cited as completely demonstrating that the cell is the actual integral structure in nerve as in all other tissues. From them we learn that its processes, instead of fusing with those of others, are sharply defined and have no relation to those of other cells, except that of propinquity, at the most contact. Having, then, clearly grasped the individuality of the nerve-cell, Dercum asks whether or no the neuron is absolutely stationary. Has it, he asks, no matter how slight, any power of movement? Such a possibility, it appears, had occurred to others six years previously, but had received only small attention, and later observations in the same direction were not endorsed by Kölliker or Ramon y Cajal. The latter's reasons for denying the nerve-cells movement, Dercum maintains, are contradictory, and defeat the object in view. In addition he quotes Wiedersheim as having actually seen in the

living animal, *leptodora hyalina*, the nerve-cells in the œsophageal ganglion move. Such a gross amœboid movement, however, is of course not contended for in the nerve-cells of vertebrates. Such a theory greatly simplifies the complex problems that arise in attempting to explain, for instance, the variability and intermittent character of the symptoms of hysterical paralysis and anæsthesia. It affords, too, a ready explanation of the mysteries of hypnotism. Sleep would be explained, not by brain anæmia, but by saying that the substance of the cortical cells has been diminished by functional activity, and their processes retracted, causing the neurons to no longer be in active relation to each other. Interchange of action cannot take place, and unconsciousness follows. Surely we have here, says Dercum, a basis upon which a rational and biological psychology can be based.

Under the term "Amaurotic Family Idiocy," Dr. B. Sachs, in his Inaugural Address as President of the New York Neurological Society, described a family form of idiocy, generally fatal, and associated with early blindness. He had collected nineteen examples, eight of which had come under his personal observation; five were boys, eleven girls, while in three the sex was not stated. They were all free from any syphilitic or rachitic taint. The salient features of these subjects were, to quote his own words, "(1) cessation of mental development, and idiocy at the age of a few months; (2) paresis of the greater part of the body, either flaccid or spastic; (3) the reflexes may be deficient or increased; (4) diminution of vision terminating in absolute blindness, with changes in the macula and later an optic nerve atrophy; (5) marasmus and a fatal termination at about two years of age; and (6) the occurrence of the affection in several members of the same family. Nystagmus, strabismus, and hyperacuity of hearing had been observed in most of the cases." As regards the etiology, a marked neurotic taint, consanguinity of the parents, and traumatism in the mother during pregnancy, were the most prominent factors. Dr. Sachs suggested the term "*Agensis corticalis*" as descriptive of the disease.

"Hemiatrophy of the Tongue, with the Report of a Case," was the subject of a paper by Dr. C. W. Burr. The most frequent instances of it due to direct injury of the hypoglossal nerve and the extremely rare cases due to peripheral neuritis are purposely omitted; only those caused by disease in or near the medulla are included. He states that the association of the condition with locomotor ataxia is relatively frequent though absolutely rare; that it is a rare complication of the spinal type of general paralysis of the insane; it may occur in syringomyelia. The onset is sometimes sudden. In a few cases the wasting has not been limited to the tongue, but has involved certain of the muscles of the neck, and has even invaded the arm. As regards the period of life of the patients referred to in the paper, 76 was the maximum age;

two cases dating from childhood have been recorded, aged respectively five and nine; both had had scarlet fever followed by convulsions, one six weeks and the other twelve months previously. The lesions found post-mortem, he states, vary greatly. Among them are mentioned chronic nuclear degeneration, a tumour of the medulla limited to one side, or one growing from the membranes or bone, meningitis, etc. While it is more commonly associated with locomotor ataxia than any other disease of the spinal cord, there is no reason why it should not occur in insular sclerosis. The writer concludes that hemiatrophy of the tongue with paresis can only be caused by a lesion of the hypoglossal nerve or its nucleus in the medulla. When hemiatrophy occurs without symptoms referable to other nerves the lesion may be taken to be in the nerve trunk, owing to the position of the nucleus to those of other nerves; but, should symptoms referable to other nerves be found, since the hypoglossal, pneumogastric, and spinal accessory nerves are in close contact, it does not follow that the lesion is within the medulla. Syphilis is the most frequent predisposing cause, but the writer is of opinion that in the future it is probable that acute infectious fevers must be admitted as occasional factors in the causation of the condition.

"Alcoholism in a Child of Three Years."—Dr. C. A. Herter presented a child, three years old, in whom he had at first suspected convexity meningitis or possibly an irregular form of tubercular meningitis; but, from the history and features of the case, he concluded that alcohol had been absorbed in sufficient quantities to produce an acute or sub-acute meningo-encephalitis. The child had been given more or less whisky daily, but seventeen days before coming under observation he had taken at one time at least twelve ounces of neat whisky, with the result that he remained in stupor for fourteen hours. He remained partially drowsy for a week. Spasticity and contractures developed, chiefly on the left side, and the knee-reflexes disappeared; but there was never any rigidity of the neck or strabismus. The pupils ultimately did not respond to light. The liver extended below the lower border of the ribs. When in hospital numerous convulsions occurred during a fortnight. After five weeks he began to mentally improve, but for two and a half months he lost weight and physically deteriorated, after which there was steady improvement, ending in entire recovery at the end of four and a half months.

"Cerebral Complications of Raynaud's Disease."—Under this heading Dr. W. Osler referred to the frequency with which Raynaud's disease was to be met with in forms of insanity. In a few cases cerebral symptoms, due seemingly to the same vascular changes which develop in peripheral regions, were to be observed. Thus he had seen a man whose epileptic attacks occurred only in winter, and were then associated with local asphyxia and superficial necrosis of the ears and also with hæmoglobinuria. A

woman of 52 had for six years at intervals local syncope in the right hand along with, on several occasions, transient paralysis of the right arm and leg, and sometimes was even associated with aphasia. The latter is believed to be a very rare complication of the disease.

Dr. W. Channing reports "A Case of Tumour of the Thalamus, with Remarks on the Mental Symptoms." The growth was found post-mortem to be a cystic-looking mass involving the right thalamus in its entire extent, and, microscopically, consisted of very numerous and rather small cells, arranged irregularly. It contained many large newly formed blood-vessels, and is to be classed as a vascular glioma. The patient, aged 41, was a school-teacher, and had actively pursued her occupation to within five weeks of death, and up to seven days of her admission to the hospital for mental diseases. Just prior to this she had completed seven or eight weeks of extremely hard class-work, and, to use her own words, she felt that if she did not have some rest she would "burst." While taking this rest she was observed at times to be unusually excited and exhilarated; at other times she would be depressed and exhausted. But there was never any dulness, lethargy, stupor, or pronounced dementia, such as is common in cases of brain tumours. She was eventually admitted to the hospital in a state of sub-acute mania, talking disconnectedly, unduly pleased with everything, and showing considerable exaltation. Hallucinations of taste and smell were present, causing her to complain of the bad smell and taste of her food. Scanty menstruation appeared the day after admission. The patella-reflexes were rather exaggerated, but equal. There was no thought at this time of any cerebral neoplasm, though it was afterwards remembered that on the day of admission there was some apparent paresis of the left arm and leg. Gradually physical symptoms of the brain lesion developed, and coincidently the brain alienation grew less and less, though an underlying happy exalted mental condition remained as long as she had any power to express herself. Though with difficulty, she could be roused and made to understand what was said to her up to within twenty-four hours of her death.

In the *Medico-Legal Journal*, December, 1895, Dr. W. Xavier Sud-duth writes upon "Hypnotism and Crime." His aim is to show that, if rightly considered, a defence of hypnotic influence ought never to be successful in protecting a criminal. He alludes to several cases, which have been quoted as examples, where it was proved that hypnotism might have been used for the commission of the crime. He points out, however, how grossly these cases have been misrepresented. Hypnotism, he says, is a modified form of natural sleep, but in its more complex form it compares to somnambulism. A person in the hypnotic state is fully conscious of his state; he is possessed of a double or dual consciousness, and will do the will of another only so long as the suggestions do not shock his sense of propriety

and are physically possible of performance. Criminal or immoral suggestions made to a moral subject meet, he says, the auto-suggestion arising from his own conscience; confusion is created in his mind, and he simply remains passive. The same is true of post-hypnotic suggestions; these, given during the hypnotic state in order to be carried out at some future time, will only be successful provided they are not repugnant to the subject in the waking state. We are to remember that there are people who are negatively honest; they are good because they have never been tempted to be bad. Such persons tempted either in the hypnotic or waking state might fall simply because of their lack of force of character. The question of successful hypnotic criminal suggestion turns therefore on a point of morals. He concludes by saying: "Given a criminal or immoral subject and a hypnotist of like character, and criminal or immoral results may be obtained. But shall a natural force of great potency be condemned simply because it may be occasionally misused?"

The same journal contains an article by Dr. G. E. Shuttleworth on "Criminal Responsibility in Idiots and Feeble-Minded Persons." In it he draws attention to the more recent and growing recognition of the incompetencies, not only of idiots, but of persons who are mentally feeble in a considerably less degree, such, for instance, as that product of our modern civilisation whom he aptly terms the "educated imbecile." Older writers, in defining who were and who were not to be considered as incapable of criminal responsibility, would probably draw the line of total incompetency at idiots. It is in the higher grades of mental deficiency that we meet with difficulty. He cites a case of arrested brain development where the intellectual power might to a certain extent reach the average, but where the moral faculties and power of control remain that of a child. To punish such a one convicted of a crime in the opinion of some from a medical point of view would be unwarrantable. Dr. Shuttleworth deprecates such a view of the case, and states that the doctrine of absolute irresponsibility is dangerous. In his experience the application of discipline to imbecile youths is distinctly beneficial. He is opposed to the growing tendency to apply too widely the term "degenerate" to extenuate excesses, which might be kept in check by a proper cultivation of the inhibitory powers. How to "make the punishment fit the crime" in such cases is a problem, for the solution of which he suggests the co-operation of the special knowledge both of doctors and lawyers.

In the *State Hospitals Bulletin*, July, 1896, is an able and most interesting paper by Dr. Warren L. Babcock on "The Relief of Intracranial Pressure in General Paralysis of the Insane, Tabes Dorsalis, and other Diseases by Lumbar Puncture." Reference is made to the previous surgical efforts by trephining and laminectomy for the relief of brain pressure and removal of excess of fluid. A *résumé*

of such operative work, he says, demonstrates in most cases some temporary improvement in the mental symptoms. This apparently depends on (1) Relief of pressure by removal of fluid; (2) Greater opportunity for brain expansion and pulsation by removal of bone; (3) Subsidence of meningeal inflammation by local depletion of blood-vessels; and (4) Shock to nervous system as a direct result of operation. Paracentesis of the spinal dura or lumbar puncture is a recent procedure, and was first advocated in 1891 in hydrocephalus, and has since been used both as a therapeutic and diagnostic measure in a variety of brain disorders. It was first performed in cases of general paralysis in England by John Turner. Following the publication of the latter's results, Dr. Babcock performed the operation twenty-two times on paretics in all stages, and other cases of brain or spinal trouble. His paper includes a description and illustration of the method of procedure. Headache of an intense, almost excruciating, character, accompanied or followed aspiration in quite 90 per cent. of the cases. The temperature remained unchanged throughout the operation, and revealed no variation from normal six hours later. The pupils showed no change except in one case, in which a previous inequality disappeared. Three of the cases in which the knee-jerk had become abolished showed return of the reflex after puncture; it, however, disappeared again after three weeks in two of the patients, while in the third it became exaggerated. A distinct improvement in facial expression was observed in three cases. But of all symptoms of paresis the most pronounced improvement was in the ataxia; this change was well marked in five out of twelve paretics and in a case of stuporous melancholia, who also had an impaired gait; and, to a less extent, improvement was distinct in the gait of three other paretics. Dr. Babcock suggests that this alleviation of ataxia is brought about by (1) simple mechanical relief of pressure to which the co-ordinating centres are subjected; (2) improvement in the circulation of the motor centres of the cord, medulla, and cortex; and (3) the withdrawal of fluid and the consequent improvement in the circulation of the cortical arterioles, re-establishing temporarily the inhibitory functions of the higher centres. Speech and muscular tremors showed some slight improvement. Grandiose and other delusions were in most of the cases absent 48 hours after puncture, and in some the old delusions remain absent or modified. The majority of the patients were made on the whole brighter and more observant—the stupor and dementia due to brain-pressure were removed. In other words the operation may, in selected cases, as it were, take a paretic out of the third stage and, temporarily at least, place him back in the second. The series of cases in which the procedure was tried embraced twelve of general paralysis; one each of locomotor ataxia, stuporous melancholia, organic dementia, and status epilepticus; two of simple melancholia with pressure

symptoms; and one case of acute delirium. In this last case the fluid withdrawn was subjected to a bacteriological examination; on all the slides the micrococcus pneumoniae and the streptococcus pyogenes were visible. Injections of the fresh fluid and of that taken five minutes after death of the patient were made into rabbits, but with somewhat, as yet, uncertain results. The amount withdrawn in the several cases ranged from 154 c.c. to less than 1 c.c. in a case of paresis punctured for the second time where the pressure seemed to be nil. In the latter case a second puncture was determined upon after the patient had relapsed from the good effects of the first puncture. Fifty c.c. of fluid were obtained on the first occasion, but only a few drops the second time. The needle was withdrawn to make sure it was pervious and again inserted, but with a like result. The explanation of this relapse is not clear. The patient from whom the maximum amount of fluid was obtained showed the greatest improvement. The rate of flow was in some instances increased nearly tenfold, that in health having been estimated to be about ten drops a minute. Re-accumulation was found to be much quicker in general paralytics in the second stage than in any other class of cases. Albumin, instead of being absent or present only in traces, was found in ponderable amounts in all cases of paresis, and was detected in the other cases, only as a mere trace however, except in the case of acute delirium, where it reached over three per cent. The chlorides were also greatly in excess in the spinal fluid of the paretics, and to a less extent in the other patients. The specific gravity was generally lower than normal, while the reaction was neutral in over 90 per cent. of the paretics, and in three-fourths of the remaining cases. Babcock's conclusions are—(1) Lumbar puncture affords temporary relief from pressure symptoms in over 50 per cent. of cases of paresis submitted to the operation. (2) The most beneficial effects are manifest over motor inco-ordination, *i.e.*, ataxia, tremors, etc. (3) Analysis of the fluid obtained in paresis shows that it contains an inflammatory product (albumin) throughout all stages. (4) It may be of benefit in locomotor ataxia, status epilepticus, or organic cerebral disease, and deserves further trial in these cases. (5) It presents excellent diagnostic possibilities, particularly in meningeal inflammations. (6) It does not sufficiently benefit melancholia with pressure symptoms to warrant its use in this disease. (7) Re-accumulation usually occurs within from three to ten weeks, when a second or even a third puncture is indicated if patient's condition admits.

Dr. F. Peterson contributes a good summary of the "Stigmata of Degeneration." He defines the term degeneracy, and refers to some points of distinction between eccentricities of genius and those of degeneracy. The various stigmata he divides primarily into three groups, *viz.*, Anatomical, Physiological, and Psychical stigmata. Under the last are included insanity, idiocy, imbecility,

feeble-mindedness, eccentricity, moral delinquency, and sexual perversion. The anatomical group includes asymmetry and various deformities of the cranium, inequality and irregularities of the face, dental anomalies, deformities of the palate, anomalies of the tongue, lips, nose, eye, ear, limbs, genital organs, skin, and of the body in general, such as giantism, dwarfishness, feminism, masculinism, etc. He dwells with considerable detail on those of the palate and ear, and several photographs are supplied in illustration of them. Seven types of pathological palates are described—the gothic-arched, horseshoe-arched, dome-shaped, flat-roofed, hip-roofed, the asymmetrical palate, and the torus palatinus. Each type, however, may present variations and combinations with other forms. The cleft-palate has not been placed in the classification, as Peterson is not sure that it may be considered as a well-marked stigma of degeneration, he only having found two or three examples among four hundred and fifty idiots and imbeciles examined. The anomalies of the ear, like those of the hard palate, claim high rank as indications of degeneracy. From the observations of others and his own studies Peterson makes out twenty-two varieties, the most important of which, he states, are: The deep position of the crus antierius; marked prominence of the anthelix; excessive broadening of the ear; stunted development or absence of the helix; trifurcation of the anthelix; widening of the fossa scaphoidea; absence of the crus superius; asymmetry of the two ears; excessive enlargement or diminution of the concha; excessive conchoidal structure of the ear; and complete absence of the lobule. This last departure from the normal is a special feature in the Cagot cretin. The physiological group of stigmata include: Under the motor function, delayed ability to walk, eat, etc., certain cases of tremors, tics, epilepsy, and nystagmus; under the sensory function, abnormalities of sight, congenital deafness, hereditary migraine, general anæsthesia and more rarely hyperæsthesia; anomalies of speech, possibly stammering and stuttering, but more important is delay in the acquisition of language or complete or partial defect of speech; anomalies of the genito-urinary function, especially retardation of puberty; anomalies of instinct or appetite. In closing, Dr. Peterson speaks of the possible etiology of these hereditary stigmata. It is to the central nervous system that we must chiefly look for an explanation. It takes strong stimuli to rearrange the nervous co-ordinations to reproduce the hereditary impulse; thus traits acquired by us in our individual lifetime are not transmitted to our descendants. It is some derangement of the nervous mechanism governing heredity which brings about deviations from the normal type. Poisons, such as alcohol, have such a power. But idiocy, insanity, epilepsy, and the like may of themselves disarrange the nervous co-ordinations sufficiently to give rise to anatomical and functional stigmata in the descendants. To the degenerate child is bequeathed a fragile

and unstable nervous constitution; this may show itself in the form of the various psychical departures, which are all more or less interchangeable. They may, however, remain latent, but in any case we are apt to find anatomical stigmata of degeneration.

International Medical Magazine, July, 1896.—“Arterio Sclerosis among the Insane,” by E. D. Bondurant, M.D. Dr. Bondurant bases his observations on 200 consecutive autopsies, and finds that only 15 per cent. are free from the disease in some form. The cases are divided into three groups, one showing no arterial disease, one slight involvement of the larger arteries, and a third exhibiting well-marked changes. The first and second group are found to die of acute disease, and the third of chronic, especially renal. It is stated that atheromatous disease appears very common among negroes. He shows that where arteries lie comparatively free, irregularly distributed patches of atheroma are common, and on the other hand where they are intimately connected with the stroma of a glandular organ adventitial thickenings are found. The question of auto-poisoning from defective excretion is discussed at some length, and the relationship between arterio sclerosis and mental disease. He also points out that the ever present mental expression in atheromatous disease is dementia of some kind.

ITALIAN.

By W. Ford Robertson, M.D.

Functions of the Pituitary Body.

Vassale and Sacchi (*Rivista Sperimentale di Freniatria*, 1894, p. 83) record the results of some further experiments that they have made in the course of their investigations into the functions of the pituitary body. In their previous communication on the subject, published in 1892, they stated that they found that complete destruction of this organ in dogs and cats had fatal consequences within fourteen days. The symptoms produced included anorexia, depression, rigid gait, fibrillar contractions, muscular spasms, and lowering of temperature. They also found that partial destruction produced a series of similar symptoms, and they concluded that these were consequent upon a true functional insufficiency of the gland. As the result of their second series of experiments they have now supplemented these observations in certain important particulars. They have ascertained that the symptoms produced by destruction of the pituitary, including the depression of temperature, can be temporarily relieved by an injection of an extract of the organ from the ox. In a case in which the pituitary was only partially destroyed the characteristic phenomena were observed for about three weeks, after which the animal gradually recovered, and remained healthy for eleven months. It may be

killed, and the fact of the incomplete destruction of the gland was confirmed. The authors maintain that the results of their experiments show that the pituitary body has certain close functional analogies to the thyroid gland. Thus its partial destruction may be tolerated, and the lowered temperature, which follows its complete destruction, is restored to normal by injection of an extract of the organ. They are of the opinion that the pituitary body, like the thyroid, elaborates a special product of internal secretion which is indispensable to the organism.

Toxicity of the Gastric Juice in the Insane.

Masetti (*Rivista Sperimentale di Freniatria*, 1894, p. 204) has carried out a number of experiments, the results of which have an important bearing upon the question of the occurrence of auto-intoxication in the insane. With certain precautions, for the purpose of ensuring uniformity of conditions, he obtained the gastric juice from several insane patients, and after passing it through a Pasteur-Chamberland filter, injected carefully-measured quantities into the auricular vein of rabbits. He also made control experiments with fluid obtained from the stomach of healthy persons. He found that the filtrate derived from cases especially of melancholia or mania accompanied by sitophobia, and of acute mania, displayed a strong toxic action. The symptoms produced were progressive rise of temperature from the time of the injection, and, supervening some hours subsequently, sometimes suddenly, myosis, great depression, paralysis and death in convulsions. On the other hand, the gastric fluid obtained from healthy persons had no such poisonous effects. The author gives reasons for rejecting the view that these toxic properties of the fluid from the stomach of certain of the insane are due to hyperacidity, or to a permanent hypersecretion of the gastric juice, and maintains that they must be attributed to the presence of altogether abnormal constituents, in explanation of which he offers three hypotheses. (1) It may be related to a primary disturbance of the gastric functions, in which case, through processes of abnormal fermentation, the toxic substances are produced in the stomach and absorbed from it, giving rise in individuals whose nervous system is in this respect susceptible to psychical disturbances. (2) The disordered gastric function may be secondary to disturbed function of the nervous centres, that is to say, secondary to the psychosis. In this case abnormal materials absorbed from the gastro-enteric tube will contribute in turn to aggravation of the mental disease and to retardation of recovery. (3) The stomach, like the rest of the alimentary tract, may act simply as an eliminating organ of a toxic principle circulating in the blood, and formed in the body. The author strongly urges that, whatever of these hypotheses may be correct, it will always be useful in cases of the kind indicated to adopt the recommendation of his, and regularly wash out the stomach.

The Superficial and Deep Reflexes in the Insane.

Agostini (*Rivista Sperimentale di Freniatria*, 1894, p. 481) has studied the condition of the superficial and deep reflexes, and of the general sensibility to pain, in over a thousand cases of insanity in the asylum of Perugia, and also, for purposes of comparison, in 200 sane persons. His paper contains, in addition to a statement of the results he has obtained and his conclusions from them, a discussion of the explanation of the phenomena observed in the light of previous physiological and pathological researches. The following are some of his more important conclusions. In epileptic insanity the sensibility to pain is generally blunted, the superficial reflexes are weak (though the plantar is often active), the idiomuscular and tendon reflexes are active. After a fit the sensibility to pain is diminished, the superficial reflexes are weak or absent, except the plantar, which is more active, while the tendon and idiomuscular are increased. In general paralysis, in the first stage, the sensibility to pain is weakened, the superficial reflexes are diminished, except the plantar, which appears to be more active, the tendon and idiomuscular reflexes are accentuated; in the second stage the sensibility to pain is diminished, the tendon and idiomuscular reflexes are exaggerated; in the third stage the sensibility to pain is very much weakened, the superficial reflexes are absent, the tendon reflexes are weak or absent, the idiomuscular are active. In epileptiform, or congestive attacks, the sensibility to pain is weak or absent, the superficial reflexes are absent, the tendon and idiomuscular are exaggerated, and particularly so on a side which has been specially involved in the seizure. If the percussion is repeated several times fibrillar convulsive tremors occur in the limb, and may pass across the trunk into the corresponding limb of the other side. In alcoholic insanity the sensibility to pain is often more acute. The superficial reflexes are weak, except the plantar, which is exaggerated; the idiomuscular and tendon reflexes are also exaggerated. In mania the sensibility to pain is acute, the superficial and deep reflexes are normal. In melancholia the sensibility to pain is normal or increased, the superficial reflexes are normal, the tendon and idiomuscular more active. In stupor the sensibility to pain, though in appearance weak, is well preserved; the superficial reflexes are weak, the deep are exaggerated. In neurasthenia the sensibility to pain is more acute than normal, and all the reflexes are more active. In secondary dementia, the sensibility to pain is diminished, the superficial reflexes are weak or absent, the deep are normal or accentuated. The author draws special attention to the different ways in which the cutaneous and tendon reflexes behave, and maintains that his observations on the subject support the view that these reflexes are represented by two distinct systems in the grey matter of the cord. Thus the one may be

affected without disturbance of the other. He also holds that the disturbance of general sensibility, in association with disease of the cerebral cortex, confirms the theory of the existence there of centres for general sensibility in association with the motor centres. The abolition of the superficial reflexes, in like cases, further points to the existence in the same region of co-ordinating and exciting centres for these reflexes.

Observation of Direct Connections between Cortical Nerve Cells.

Vassale and Donaggio (*Rivista Sperimentale di Freniatria*, 1895, p. 170) in a preliminary note upon certain results obtained with a new modification of Golgi's silver method, record some observations which, if their accuracy should be fully confirmed, must have great importance in relation to cerebral physiology. The modification consists merely in the addition to the bichromate solution of 5 per cent. of acetic aldehyde. In this mixture thin pieces of brain are hardened for from 15 to 20 days, and then further treated as in the ordinary silver method. The authors state that this procedure brings out certain details of structure not otherwise revealed. The spines of the protoplasmic processes of the nerve-cells are longer and more delicate than they commonly appear, and here and there they assume the aspect of true fibrils. In the brain of the fowl, which they have found to give the best results with the new method, the axis cylinders can be followed for a long distance. They repeatedly ramify, and some of the finest branches can be traced into the spines of the protoplasmic prolongations of nerve-cells more or less distant. Regarding this observation, the authors say, "This fact, which, if it should be confirmed, would naturally have the greatest importance for the theory of the continuity as opposed to the modern doctrine of the contiguity of the nervous elements, we for the present limit ourselves to merely stating with due reserve, intending to continue the line of research."

Pathology of Acromegaly.

Professor Tamburini (*Rivista Sperimentale di Freniatria*, 1894, p. 559; ditto, 1895, p. 414) gives a very full description of a case of acromegaly, and discusses at considerable length the pathology of the disease. The patient was a woman, aged 37, who, for a year before her death, was an inmate of the asylum at Reggio. The history pointed to the disease having probably commenced about the age of twenty. On the other hand the mental symptoms on account of which the patient was sent to the asylum began to show themselves only a year before her admission. They consisted chiefly in delusions of suspicion accompanied by threats and acts of violence. The patient presented in a marked degree the bodily changes characteristic of acromegaly. While in the asylum she was confused, resistive and suicidal, and refused her food.

The immediate cause of death was chronic intestinal catarrh. The post-mortem examination revealed, in addition to marked osseous changes in the skull—of which the author gives a very minute description—the presence of a tumour of the pituitary body of about the size of a pigeon's egg. Only the anterior lobe was involved, the posterior presenting no change either in volume or structure. The enlarged lobe showed in microscopic sections a delicate connective tissue stroma, supporting cells having the characters of the chromophile cells of the normal organ. The author states that, as far as he has been able to ascertain, the number of cases of acromegaly previously described in which a post-mortem examination was made, is only twenty-four. In seventeen of these, which were all undoubted typical cases of acromegaly, a tumour of the pituitary body was found. Of the other seven, in which there was no lesion of this organ, he disposes of five as not having been cases of acromegaly at all. In the remaining two the disease had only been of very brief duration, and he maintains that there might have been functional alterations in the organ which were not accompanied by any perceptible change in its volume, while the absence of structural changes was not established by microscopic examination. On these grounds he maintains that one is justified in concluding that the lesion that is constantly met with in autopsies upon typical cases of acromegaly, is tumour of the pituitary body. This usually takes the form, as in his own case, of an adenoma.

Dr. G. Angiolella on General Paralysis of the Insane.

Dr. G. Angiolella, of the Asylum of Nocera Inferiore, contributes four papers on the subject of general paralysis to *Il Manicomio Moderno* (1894-5), in which he formulates some conclusions of considerable interest regarding the pathology of the disease. In the first paper he continues the statistical inquiry of Roscioli, who, in 1890, in an article published in the same journal, drew attention to the marked increase of general paralysis in the south of Italy. The later figures, compiled from the records of the same institution, show a still further increase, while at the same time the author is led to conclude that the disease grows in gravity and malignity with regard both to its clinical type and the rapidity of its course. The second paper deals with the results of a histological research, which go to show that in general paralysis the sympathetic ganglia are constantly affected by a chronic inflammatory change of the connective tissue and vessels, accompanied by degeneration and necrosis of the nerve-cells. The third article is a review and critique of recent work upon general paralysis, and contains the following among other conclusions:—The pathological changes in general paralysis result from the presence of toxic substances in the blood. These may be produced by syphilitic infec-

tion, or by certain special poisons, such as alcohol and nicotine; or they may originate in the organism itself in consequence of excessive activity of the nervous system. The small vessels are first affected by morbid change, and to this the alterations in the other tissue elements are secondary, though the nerve-cell degeneration may be in part a direct product of the action of the toxic agents circulating in the blood. The fourth paper records the results of an investigation into the condition of the vessels of the liver and kidneys in general paralysis. The author finds that the small arteries in these organs show morbid changes similar to those that occur in the nervous system, and maintains that the observation goes to confirm the view that general paralysis is produced by toxic substances circulating in the blood.

The Descending Endo-hemispheric Degenerations following Extirpation of the Frontal Lobes.

Professor Bianchi, of Naples, has followed up his important experimental researches upon the functions of the frontal lobes with a study of the paths taken by the descending degeneration that occurs after the removal of this portion of the brain. He gives an account (*Annali di Neurologia*, 1895, p. 149) of his observations upon the brain of a monkey eleven months after extirpation of both frontal lobes. He found degeneration of the cingulum and of the other longitudinal fibres of the limbic convolution, of the superior longitudinal fasciculus, the occipito-frontal fasciculus, and the whole of the external capsule. He distinguishes between a superior longitudinal and an occipito-frontal fasciculus. The former goes to the external capsule, the latter follows the curve of the caudate nucleus, turns downwards at the level of the optic thalamus, and then spreads itself out in the angular gyrus, the occipito-temporal lobe and the tapetum. He opposes the theory of Sachs that an occipito-frontal fasciculus only exists when the corpus callosum is wanting; and he also disagrees with the opinion of Wernicke that its fibres join the internal capsule. He maintains that there is no basis for Schnopfhagen's statement that the external capsule consists of fibres of the corpus callosum derived from the frontal lobe of the opposite side. He concludes that the frontal lobes contain a vast corona radiata of association fibres, but only a very small number of projection fibres; and regards their functions as consisting specially in that physiological fusion and synthesis of all the sensory and motor products by which is constituted a psychical personality, and in the exercise of a control over all the other centres.

ASYLUM REPORTS.

Some English County and Borough Asylums.

Berkshire County.—Speaking about the causation of insanity, Dr. Murdoch thinks that while legal restrictions are not to be expected for the prevention of the marriage of tainted people, a great deal might be done by “judicious and systematic education of our villages where this evil is chiefly propagated.” He also regards alcohol as a less prolific cause directly than it is indirectly, that is to say the drunkard’s children help to fill the asylum more than the drunkard himself.

An unfortunate epidemic of typhoid demonstrated the immense value of the new infectious hospital. The exact source of the mischief was unascertained at the date of the report, the analysts not agreeing as to the potability of the water on which suspicion had been thrown.

Birmingham City Asylum, Winson Green.—Mr. Whitcombe supplies some interesting statistics in his own report. While the proportion of males in the Birmingham population is slightly less than the proportion of England and Wales, the male asylum population is both relatively and absolutely greater than the female. On looking up the number of lunatics in the Birmingham City and other union workhouses we find that this reversal of the usual state of affairs is slightly discounted, but the fact remains that lunacy in males is more prevalent than in the other sex. The admissions in 1895 show this strikingly, being males 215; females 178.

Dealing with the question of the alleged increase in lunacy, Mr. Whitcombe claims that the right way to approach the study of the subject is from the proportional number of *first admissions*. From elaborate tables he shows that in Birmingham during the three decades 1861—91, while the total admissions have increased from 4·7 per 10,000 to 6·5, the first admissions have increased from 4·0 to 5·4. The corresponding increases for the last eight years are 6·4 to 7·9 and 5·2 to 6·1. This clearly shows the influence of relapses in swelling total admissions. But in comparing the proportion of first to not first admissions in Birmingham on the one hand and to England and Wales (Table XX., Commissioners’ Reports), we find that it is very much smaller in the former. The increase of the boundaries of Birmingham, and the consequent influx of a considerable quantity of fresh patients did not seem to lead to any appreciable difference in the ratio of relapses.

Rubery Hill.—The disproportion of males to females is noted here also, the admissions of the former being 75 as against 33. Of the 32 deaths no less than 13 resulted from cardiac disease.

Bristol City Asylum.—No sooner has Dr. Benham got through

with all the extensive alterations and reorganisation (his energy and success therein being warmly commended in the Commissioners' Report), than he is forced to call for a large increase in female accommodation. The electrical arrangements allow of registration on the record sheet of epileptic fits during the night.

Carmarthen.—Dr. Goodall has applied himself to the study of Welsh, and with success, for he is enabled to present his readers with his report in the vernacular as well as in his mother tongue. It is a comfort to think that when the English language follows the Church to disestablishment in Wales, the editors of the Journal will not have to go outside their own body for competence to render a Welsh Retrospect. It is a notable achievement to conquer a totally new language in the short time that a recently appointed Superintendent can spare from his duties.

Dr. Goodall urges the institution of a Psychiatric service in prisons similar to that which is found in Belgium. The prisons would be under the regular supervision of medical (alienistic?) experts. He thinks that this would lead to the "segregation for special education of those offenders who are neither insane nor responsible."

He thinks that an idiot establishment for Wales should be built to contain from 400 to 500 beds. This would put a stop to the crying evil of having idiot children in asylum wards, which exists here as elsewhere.

Cheshire County Asylum, Parkside.—Pressure on space has been somewhat relieved by the willingness (rare indeed) of various union authorities to receive back harmless cases in exchange for acute ones. If this can be done satisfactorily in one county it seems difficult to find a reason for its not being done generally. No doubt progress will be hastened by the extension of the 4s. grant on the lines of the resolution passed by the Association, which we are glad to see has been endorsed by the Commissioners.

Here also the immense value of the new isolation hospital has been demonstrated in an epidemic of typhoid fever, due probably to old and inefficient drainage.

We are glad to see that the salaries of the Assistant Medical Officers have been materially increased. Dr. Sheldon's system of training attendants is very catholic and much to be commended.

The training of attendants and nurses has been steadily pursued with very encouraging results: last year I reported the success of 27 attendants and 34 nurses at the First Aid Examination of the St. John's Ambulance Association; since then 12 other nurses have passed the same examination, at the end of a year's training, and after undergoing two years' training, 24 attendants and 25 nurses have passed the Nursing Examination also conducted by the St. John's Association. Up to the present, no candidate has failed, which is ample testimony to the hard work done by my colleagues Drs. Cooke and Laing. The next step is to take the Certificate of the Medico-Psychological Association after an additional year's work; it may then be claimed that we give in this institution an education in Mental Nursing fully equal to that afforded by General Hospitals for Sick Nursing.

Cumberland and Westmoreland County Asylum.—In remarking on the abnormally high number of admissions during the year, Dr. Campbell can assign no reason unless it be “the hot weather of last summer, for in the specially hot weather which was experienced in 1893 both in this and another asylum in the north of England there was an unusual run of admissions.” In June there were 28 as against an evenly-distributed monthly average of 16. Thirty-two cases had attempted suicide and four came in with severe throat wounds. Dr. Campbell notes the great difference in behaviour of the patients in the excessive cold at the beginning of the year, and the great heat later on, the difference of course being much in favour of the former.

With the opportunity of getting private patients under care here, and with the even greater facilities which will be available when the house at present building is completed and opened, it is to be hoped that people who are able to pay for the maintenance of their relatives will do so and not think that by refunding the outlay for maintenance to Boards of Guardians that they are paying for their relatives, as some do at present.

Derby County Asylum.—Dr. Murray Lindsay, in the face of an admitted increase in numbers, considers that the only safe conclusion to come to is that there has been an increasing accumulation for some years, and not a positive increase more than can be accounted for by increase in population. In spite of the opinion of some others we must confess to attaching great weight to the conclusion of an observer with such long experience as Dr. Lindsay has, and we think after looking over many reports for the year that the balance of valuable opinion is still in favour of caution in accepting the popular belief in the spread of the disease.

We note the reported recovery of a female general paralytic.

Derby Borough Asylum.—A case of small-pox was admitted not showing symptoms of the disease. The use of the thermometer led to the detection of the disease, and the patient was at once removed. General vaccination obviated further spread. The Committee allow the handsome yearly addition of £4 for the possession of the Association's certificate. The large proportion of 7 out of 17 cases of general paralysis remaining at the end of the year were females.

The general health was extremely unsatisfactory, and over two-thirds of the admissions (68) suffered from recognisable physical disease. This is a large proportion, and suggests the obvious conclusion that in many cases mental symptoms appear in the course of intercurrent bodily disease, and necessitate the patient being sent to an asylum.

Dorset County Asylum.—At the date of report Dr. Macdonald had got all the female patients into the new buildings, and the old asylum at Foston was finally relinquished. The abolition of open fires and substitution of means of general heating has been found to conduce to complete health. Dr. Macdonald can add cheapness to the other advantages of the electric light, for after prolonged

and careful investigation of the cost he finds that its cost is equivalent to gas at 1s. 4½d. per 1,000 cubic feet. To this might have to be added a small sum to represent the extra cost of plant. Melancholia occurred among female admissions in only one case in four. Alcohol showed a considerably less frequent causation, i.e., 5 per cent. An unusual number of cases of simple confusional insanity among women were observed, and almost invariably attributed to influenza. There now are no locked doors between any of the wards or rooms or between the wards or recreation gardens. Dr. Macdonald's services are warmly commended by the Visitors, which is as it should be, looking to the enormous worry and responsibility thrown on a Superintendent by the reconstruction and reorganisation of a large asylum.

Glamorgan County Asylum.—The statistics of this asylum undoubtedly show a huge increase of admissions for the year—there being 406 as against 291, 287, 278, 308, and 249 in the preceding years. The recoveries and deaths were below the average, and in consequence the population, which on January 1st was 1,162, leapt to 1,316 by December 31st. Fifty-seven cases were paralytics, and out of the 309 cases in which a causation was assignable 92 were stated to be due to drink, 16 to sexual excess, and 13 to venereal disease.

In his report Dr. Pringle writes :—

From these (the judicial statistics of England and Wales) it will be found that whilst Wales generally is comparatively free from crime and vice, Glamorgan and Monmouth are the worst counties in the kingdom, and attention is called to the fact that their populations are largely concentrated in towns and urban districts—in Glamorgan two-thirds are so placed—and also the fact of both the counties having large seaports is not counted to them for righteousness, and the inference is drawn that “Their case would seem to bear out the theory that a race which is most innocent in an agricultural state becomes the most corrupt and criminal when concentrated in cities.” With this theory, as applied to Glamorgan, I do not altogether agree, since its population is probably a more mixed one than that of any county in the kingdom, and to speak of it as a race once innocent, now corrupt, is misleading in the highest degree. Now whilst the above refer only to crime and drunkenness, the same causes operate largely in promoting disease, mental as well as bodily. Although the stimulus of city life develops the highest intellectual and moral faculties, it also tends to physical degeneration, lowering of the vital functions, craving for alcoholics, and susceptibility to nervous maladies, so that the more rapidly a population becomes aggregated into large centres the more surely do the injurious influences of town life operate in weeding out its weakest members by insanitary or other diseases. I have in previous reports called your attention to the fact that the ratio of insane to sane in this county has hitherto been lower than in almost all other counties of England and Wales, and I have also pointed out that this was due to the large influx of healthy people who were constantly pouring into the district to seek work, and that in time, when the population became more stationary, this element of healthfulness would cease, and the question arises has that time arrived that there should be such a marked increase of insanity? Upon this point, I fear, no definite answer can be given until the next census supplies the necessary statistics.

Gloucester County Asylum.—We have frequently in former years

expressed a hope that Mr. Craddock would be able to see his way to adopt the Association tables in their entirety. It is very disappointing that the statistics of an important asylum—though copious, too copious in some directions—should be so utterly useless as these are for purposes of comparison with others. We again urge that the chief value of these tables is the formation of a large bulk of information which, being gathered together, is of far more value than the observations of one locality only. There is no table of forms of insanity on admission, the table of assigned causes is hopelessly elaborated, and the heads are arranged alphabetically. The table of causes of death is particularly open to criticism, not only for its departure from accepted pattern but for its unsatisfactory arrangement. For instance, it is split up into three main divisions, which are:—1. Cerebral and spinal diseases. 2. Thoracic diseases. 3. Special diseases. Under the first we find deaths from exhaustion from general paralysis, 18; from exhaustion from general paralysis and pneumonia, 4; and under the second from pneumonia and general paralysis, 1.

Hants County.—Dr. Worthington reports there have been four cases of very mild typhoid fever, one female patient recovering sanity when she became convalescent. The block for 50 idiots is occupied; a large play-room as well as a school and dining-room have been provided for the children, together with a considerable portion of land, planted and railed off from the other portion of the estate. We find that the total of recoveries is given as 88 in most of the tables; it is given as 96 in the analysis (Table II.). We mention this fact only because the discrepancy may account for six recoveries from general paralysis, and others from congenital deficiency being entered, possibly by inadvertence.

Kent County. Barming Heath.—A very interesting case is reported bearing on the known difference between the sane and the insane in the manifestation of symptoms.

G. E. Under treatment for sub-acute tonsillitis, sat up in bed, suddenly fainted, fell backwards and died shortly afterwards. Upon post-mortem examination, ulceration and perforation of the intestines were found. He had suffered and died from enteric fever, yet not one symptom of the disease had been observed during life.

The training of the attendants is well established, and Dr. Davies considers the prospect of success to be encouraging.

Kent County. Chartham.—Additions for 300 more patients are contemplated.

Lancashire. Prestwich.—In this, the only report from the county which has reached us, there is as usual ample evidence of the pressure on space which has existed for years past, and which will, we believe, be relieved for a short time only by the opening of the fifth county asylum. The Visitors report that the arrangement with the Rochdale Union (under sect. 26) continues to work well. The erection of a new sewing-room, 150 feet by 25 feet, betokens

the immense mass of patients to be dealt with here. Twenty-five per cent. of the male, and 5 per cent. of the female admissions were general paralytics. In the 536 admissions only two were congenital and seven demented.

Monmouth, Brecon, and Radnor.—A dissolution of union has been ordered by arbitration, the latter two authorities going out. There were 62 private patients whose removal would at first sight have been an obvious step towards relieving existing pressure, but it was pointed out that such removal would have been followed in the great majority of cases by readmission as paupers.

Newcastle Borough Asylum.—Considerable additions are being made here, accommodation being quite inadequate. Fifty out of 134 admissions were hopelessly incurable, from general paralysis, organic brain disease, epilepsy, etc.

Northampton County Asylum.—As has been the case since its opening this institution continues to offer its hospitality to the homeless patients of many other authorities. Out of 827 patients on the books at the time of the Commissioners' visit no less than 346 were out-county or private. Of the latter there were 37, while of the former, after deducting 136 from Northampton borough and 66 from Peterborough, the remaining patients came from Durham, West Sussex, Stafford, Derby, London Unions, single cases from Chesterfield, Gloucester, Sheppey, Dorking, etc. Apart from the question of hardship to patients arising from expatriation, undoubtedly in many cases unavoidable, a good deal can be said from a financial point of view as to the benefits conferred on the ratepayers of the county itself. The Committee state that they have met all repairs out of the extra charge made. The latter turned up a profit of £5,300. This is a large sum, and though large is justified no doubt by non-contribution to capital expenditure, and by wear and tear. Still, the maintenance rate, 7s. 6d. per week, is nearly the lowest in England, and might, we should think, bear a little increase in all-round comforts in view of the large profit. The private patients have a distinct grievance in our opinion, as from £1,636 paid for them no less than £812 was paid over to the County Council; this being the excess over weekly charge. The average yearly payment of each, say at least £40, would in Scotland procure really private-patient treatment. One of the few great benefits conferred by the Lunacy Act, 1890, was the power given to Visiting Committees of affording something like a *quid pro quo* for increased charge for private patients.

(To be continued.)

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

GENERAL MEETING.

A General Meeting was held at the Rooms of the Association, 11, Chandos Street, Cavendish Square, on Thursday, November 19th, under the Presidency of Dr. Julius Mickle.

The following were elected as Ordinary Members :—Reginald L. Langdon-Down, M.B., B.C.Cantab., M.R.C.P.Lond., Normansfield, Hampton Wick. George Fletcher Collins, M.R.C.S.Eng., L.R.C.P.I., D.P.H.Cantab., Resident Medical Officer, Ticehurst House, Sussex. James M. Rutherford, M.B., C.M. Edin., Assistant Physician, Royal Edinburgh Asylum, Morningside. James Charles Martin, L.R.C.S.I., L.M., L.R.C.P.I., Assistant Medical Officer, District Asylum, Letterkenny. Charles G. Cassidy, M.B. Edin., Assistant Medical Officer, Grahamstown Asylum, South Africa. S. Mallannah, M.B., C.M. Edin., Medical School, Hyderabad, Deccan, India. Richard Ambrose Coles, M.B., C.M. Aberd., Corsley, Warminster, Wilts. Alan Charles Turner, M.R.C.S.Eng., L.R.C.P.Lond., 79, Gordon Road, Ealing. James Henry Horton, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, The Priory, Roehampton, S.W. Eric France, M.B., B.S. Durh., Assistant Medical Officer, Northumberland County Asylum, Morpeth. William Rushton Shortt, M.B., B.S. Durh., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, City Asylum, Gosforth, Newcastle-on-Tyne.

Dr. MERCIER read a paper on "Medical Reticeance."

Dr. C. H. BOND read notes on "Further points in the relation of Diabetes to Insanity."

Both these papers with relative discussions will be printed in the next number of the Journal, and members will kindly note that Dr. Mercier's paper will come up for discussion at the Annual Meeting of 1897.

The members dined together after the meeting at the Café Royal, Regent Street, at 6.30 p.m.

MEETING OF THE IRISH DIVISION.

A meeting of the Irish Division was held at Londonderry Asylum on August 11th. There were present Dr. Conolly Norman (in the chair); Drs. Hetherington and Rutledge (Londonderry), Finegan (Mullingar), Oscar Woods, Hon. Sec. Letters of apology for non-attendance were read from Drs. Moore (Letterkenny), Patton (Dublin), Lawless (Sligo), and others.

Much disappointment was expressed at the small attendance of members, and after some discussion it was decided that every effort should be made to induce both Superintendents and Assistant Medical Officers to attend the meetings held once a year at the asylums. With so many Assistant Medical Officers as there are in Ireland at present there should be no lack of material for original work. Some discussion took place as to the best asylum to select for the next place of meeting, and the Secretary was requested to communicate with the Superintendents of Clonmel, Ballinasloe, and Waterford, and, if possible, arrange for a meeting at one of these asylums.

The Hon. Sec. reported the result of the discussion which took place in London with regard to the examination for the Nursing Certificates. The Chairman and others approved of what had been done, and believed if the examination papers could in future be forwarded to medical examiners, to whom a power of veto could be given, that uniformity of examination would be secured.

Dr. RUTLEDGE (Londonderry District Asylum) read a paper on "Photography as an Aid in the Diagnosis of Mental Disease." He conclusively showed the value of this method of recording the various conditions of insane patients. He referred to the difficulty of describing a face, an attitude, a gesture, and claimed for photography that it conveyed a tenfold more truthful conception of the condition. Dr. Rutledge also showed the value of being able to preserve in permanent form these pictures for the purposes of study and comparison. He held that by this method of observation we are able to roughly classify cases and follow each out to the ultimate issue. There was also the great advantage of future workers having access to graphic delineations, which give vigour and reality to the formal case books. Dr. Rutledge concluded by demonstrating the simplicity and cheapness of modern photography; and showed a large collection of most interesting photographs of the patients in the Londonderry Asylum, mostly taken by himself, developed by the head attendant, and printed by one of the nurses.

Dr. HETHERINGTON read notes of a case of cervical caries (see page 102).

The afternoon was spent in the wards, when Dr. Hetherington gave demonstrations on several interesting cases.

MEETING OF THE SOUTH-WESTERN DIVISION.

A meeting of the South-Western Division was held on the 20th October, at Fisherton House Asylum, Salisbury, by kind permission of Dr. Finch. The chair was occupied by Dr. Mickle (President), and there were also present Dr. Corbin Finch, Dr. B. Finch, Dr. Benham, Dr. Wade, Dr. Manning, Dr. Fox, Dr. Davidson, Dr. McBryan, Dr. Stewart, Dr. Brunton, Dr. Stratton, Dr. Cardale, Dr. Boddie, Dr. Briscoe, Dr. Macdonald (Hon. Secretary), and Dr. Lee (as visitor).

NEW MEMBERS.

The following new members were elected:—Andrew Davidson, M.B. and C.M., Senior Assistant Medical Officer, County Asylum, Dorchester; William Boddie, M.B., C.M., M.A., Assistant Medical Officer, Fisherton House Asylum, Salisbury; Henry J. Cardale, M.B. and C.M., Assistant Medical Officer, Fisherton House Asylum, Salisbury; C. E. Stratton, F.R.C.S.Ed., etc., Medical Visitor, Fisherton House and Laverstock Asylums.

THE NEXT MEETING.

The HON. SECRETARY announced that he had received from Dr. Soutar, Gloucester, an invitation for the members of the South-Western District of this Society to meet next (spring meeting) at Barnwood House.

On the motion of Dr. STEWART, seconded by Dr. BRISCOE, it was unanimously decided to accept Dr. Soutar's invitation, and it was left to the Secretary to arrange the most convenient day.

Dr. J. F. BRISCOE read a paper on "Constipation in the Insane." He defined the term in its various senses and gave an account of the processes involved in normal digestion. Dr. Briscoe then pointed out how constipation is increased and auto-infection set up by voluntary opposition to defaecation, and detailed the symptoms arising—such as mental apathy, irritability, perverted moral feelings, melancholia, suicide, mania, etc., which, if not cured, could certainly be considerably relieved by Epsom salts, the emperor of purgative medicines. He held that ordinary constipation is a troublesome and intractable symptom of insanity, owing to the insensibility and torpor of the whole system. Dr. Briscoe showed how the defective elimination of faecal putrid products favours absorption and the intoxication of the ultimate constituents of the nervous system, giving rise to mental aberration. He further held that there is a tendency on the part of some physicians not to devote sufficient attention to the functions of the digestive organs and their chemical reactions; and emphasised the facts of recoveries from mental diseases owing to complete evacuation of the bowels. Dr. Briscoe showed that constipation in the insane

might be either owing to nervous or mechanical causes, and advised careful investigation into such conditions as hæmorrhoids, pelvic diseases, etc., and suitable treatment. He urged that the same care should be exercised in regard to excretæ as in regard to food; and that careful chemical and bacteriological investigations should be undertaken. Dr. Briscoe concluded by stating that it is no longer sufficient to diagnose dyspepsia, but that we ought to be able to prove the particular form of defect by analysis, and to obviate the risks of disturbance by the poisonous elements produced by the organism.

The PRESIDENT said that Dr. Briscoe had read them a paper on a very important and a very practical subject. Everyone who had anything to do with the insane knew that constipation was a most difficult and trying symptom to deal with. There was an enormous variety of conditions under which constipation occurred in the insane, and he must confess to some feeling of disappointment that that was not pointed out in the paper. They had patients who were constipated because they neglected the every-day requirements of health, which included regular defæcation. There were those who were so wrapped up in delusions, hallucinations, and so on, that they entirely neglected the normal functions of the body. Again, they had constipation in the insane due to certain kinds of delusions—one, for example, where a patient had the delusion that it would be a detriment to himself if he should have a motion of the bowels. There were cases where constipation ensued in the paralytic condition, owing to the nonfulfilment of functions by the muscular coatings of the bowels. Then they had an important set of causes, which comprised several different forms of insanity in which constipation occurred as part and parcel of the physical condition which originally caused the whole malady. Mental symptoms arose out of purely physical conditions, and constipation arose as a collateral effect of the general cause. He needed only to cite the condition of melancholia, in which the patient lost, more or less, the power of performing every bodily function. When they came to consider the various origins of constipation in relation to treatment, surely that necessitated in the first place very accurate and minute investigation of each particular case. It called upon and exhausted the powers of the most clever among them to thoroughly diagnose and properly treat the cases that came under his care. He did not know anybody who could do it with perfection. That perfection was not likely to come in their day. No two cases of constipation could be treated exactly alike. If they took a case in which it arose as part of the physical condition, it was perfectly useless to treat it until they had removed the general condition of which it was a collateral effect. What they ought to do was to attract the attention of the patient to the need of properly exercising his bodily functions, and create regularity of habit. So far as concerned this matter, habit was everything.

Dr. STEWART said their Secretary would bear him out in regard to a fact which came under his notice at the Dorset Asylum some years ago. There was an extremely small number of cases of constipation there in contrast with other asylums. He attributed that to the circumstance that a very large quantity of vegetables entered into the diet as arranged by the late Superintendent (Dr. Symes).

Dr. BENHAM said he was quite in agreement with what Dr. Stewart had said as to the desirability of vegetables entering largely into the dietary of the insane, but they had cases in which the use of drugs was desirable. They had seen cases who had entered an asylum suffering from constipation become comparatively sane after a strong purgative. In such cases, no doubt, the habit of constipation was largely responsible for the condition in which the patient was when admitted, and by preventing a recurrence of that condition it practically meant the sanity of the patient in the future. He was a little disappointed that the subject of treatment was not gone into. He was quite in agreement with the statements that had been made as to the value of Epsom salts in places where more expensive remedies could not be afforded. There were cases of

acute constipation in which the patients were intractable, and would take nothing. It was necessary that the bowels should be relieved, and he had found that one or two drops of croton oil, say in their tea, had the desired effect.

Dr. Fox said that he had under his care a patient whose condition was such that he was allowed to walk about by himself, and seemed as capable of feeding himself as anyone. But he got into an extremely low condition, and became very emaciated. He was taking plenty of food. Several physicians saw him, and it was at length found that he was suffering from scurvy. As soon as they put him on the ordinary diet for scurvy he began to mend, and now he was just as well, if not better, than before. Taking a lesson from that experience, the most strict supervision was now exercised over the food of the asylum.

Dr. MACDONALD said that quite recently he saw a most interesting case of mental disease in which constipation played a most important part. It was that of a lady suffering from acute melancholia, who, up to the period of becoming insane, was attended by a very able physician. On admission to the asylum it was stated that in all probability there had been no proper action of the bowels for nearly two weeks. It was soon discovered that the patient was suffering from obstinate constipation, and though several remedies were employed it was finally found necessary to give croton oil. As invariably happens, this remedy had the desired effect, but the subsequent history of the case was disappointing. The exhaustion which followed the action of the bowels was so severe that the patient did not rally, and gradually sank and died. Now this might be an extreme and rare case, but it teaches the necessity of carefully and minutely examining and regulating the various systems. Several years ago he was concerned with the treatment of a long-standing case of melancholia, with persistent dirty habits, more particularly by night. This patient underwent every conceivable course of treatment, as well as individual nursing. All having failed, after rectal examination a huge collection of large scybulous masses was removed. From that date the constipation and dirty habits ceased, and the man made an uninterrupted recovery. This second case was a good illustration of the need there is for individual treatment in the case of the insane. They were sometimes scoffed at for suggesting hospital treatment in large asylums, especially by those who have only a few patients under their care. Individual treatment, he feared, is impossible, except in a superficial and haphazard manner, in many of the ungovernable asylum mammoths of recent construction. Very little had been said regarding treatment, and he could not name any specific, but of this he had no doubt, that a carefully regulated diet and proper exercise would produce better results than all the drugs in the pharmacopœia.

Dr. BRISCOE said that in the time allowed they could not go into the question of treatment. With regard to hospital treatment, patients in large asylums did not get individual attention, and could not be so well looked after as in private institutions, and frequently if those patients were made to go to closet in a more systematic way many troublesome cases of melancholia so treated would recover very much quicker. In private institutions they could watch patients more carefully. In regard to drugs, each case must be treated on its merits. One man liked one thing, and another man another. He agreed that croton oil was a useful drug. When he (the speaker) was assistant to the late Dr. Sankey, the latter had one drug which he said was *par excellence*, viz., aloin. Croton oil was a dangerous drug, and he should not give it to every patient. In his own asylum the patients had vegetables every day. Porridge was also a very useful form of diet. All his private patients had a bunch of grapes every morning. With vegetables and fruit they found the bowels kept all right. In regard to the discussion, the one chief thing that disappointed him was that the chemistry of the subject had not been discussed as much as he had hoped, for instance, as to the injurious effect created by the retention of the fæces.

Drs. MACDONALD and DAVIDSON then read a paper on "Mental Symptoms (not General Paralysis) associated with *Tubes Dorsalis*" (see page 63).

Thereafter Dr. H. T. MANNING read notes of "Cases in Lunacy Practice," which will be published in a subsequent number of the Journal.

On the motion of the PRESIDENT, a hearty vote of thanks was accorded to Dr. Finch, who had received them with noble hospitality, and had ensured the success of their meeting.

MEETING OF THE SCOTTISH DIVISION.

A meeting of the Scottish Division was held in the Hall of the Royal College of Physicians, Queen Street, Edinburgh, on Thursday, 12th November, 1896. Dr. McDowall, President Elect, occupied the chair, and there were present Dr. Beadle, Dr. Bruce, Dr. Cameron, Dr. Clouston, Dr. Ford Robertson, Dr. Edgerly, Dr. Havelock, Dr. Hotchkiss, Dr. Ireland, Dr. Keay, Dr. Mitchell, Dr. A. E. Turnbull (secretary), Dr. Urquhart, Dr. Watson, Dr. Wilson, and Dr. Yellowlees.

The minutes of the previous meeting, held in Glasgow, were read and approved.

Charles Macpherson, M.D., Deputy Commissioner in Lunacy for Scotland, was elected a member of the Association.

Dr. FORD ROBERTSON read "Notes on the Structure of the Neuroglia," (see page 67).

Dr. URQUHART read a "Note on the Department for the Insane in the Communal Hospital of Copenhagen." He stated that the hospital contained 900 beds, and was in constant touch with the University; and described the two pavilions, each containing about sixty beds, under the care of Dr. Pontoppidan. These pavilions receive the nervous and mental cases belonging to the city—that on the west such cases as paralysis, locomotor ataxia, and so on; that on the east the insane sent for observation and report after criminal offences or provisionally admitted for treatment to recovery or transfer to the large asylum at Roskilde. Dr. Urquhart drew special attention to the fact that for eight years the nursing of the insane has been done by women, three nurses and one attendant in each of the two male wards, containing eleven patients each. During that time only one case had proved impossible for female nursing. He concluded by referring in detail to the nature of the cases under care, and commended the system in use at Copenhagen as beneficial to the patients and the public. He deprecated estrangement in the study of nervous and mental diseases, and urged that the medical school and the asylum should be in intimate contact.

The CHAIRMAN said that twenty years ago he had been at two Danish asylums—Roskilde and Wortemborg—and these two places presented remarkable contrasts in their treatment of the patients. The Roskilde institution was managed upon the English method, and the other on the French method. These asylums were managed on Danish lines with great ability and perseverance. The number of hours spent by the physicians in the wards would astonish most of them very much indeed. Ten hours a day would be rather more than most of them could stand, but that was what was done.

Dr. YELLOWLEES said he had been contrasting in his own mind Denmark with Damascus, where every patient in the hospital was shut up in a stone cell, and had an iron chain round his neck.

The CHAIRMAN said that he had observed that they had had a meeting in Edinburgh on that very subject, and that the insane in Syria seemed to be very badly treated.*

Dr. IRELAND remarked that in Mohammedan countries they allowed a great deal of freedom to lunatics. That was begun a long time ago, and was a step in the right direction. Lunatics were allowed to wander about at will, and

* Dr. Clouston will gladly receive any subscriptions in aid of these unfortunates.—Ed.

were never ill-used. From a kind of superstitious respect, they were treated with kindness and forbearance. He had hoped to accompany Dr. Urquhart to Copenhagen, as he was anxious to see the different institutions for the blind, the deaf, and the imbecile. A friend of his who had also visited France and Germany had said that these classes were better cared for in Denmark than in any other country which he had seen. He would like to know what the percentage of recoveries was, and what was the death-rate.

Dr. TURNBULL said that in a letter he had had from Mr. Sanborn, of Massachusetts, he mentioned that when he was in Holland he saw the same thing which they had been claiming as original in Fife, namely, the male patients under the charge of female nurses, at Meerenberg.

The CHAIRMAN—I understand that that was given up.

Dr. TURNBULL—In Worcester it was done partly. There was an impression that all the admissions in the Fife Asylum were under female nurses, but he never meant to give that impression. It was the cases of bodily sickness which were under the charge of females. New admissions were under the charge of attendants; in that they had made no change.

Dr. URQUHART thought that it was quite clear that Dr. Turnbull had the honour of introducing this system for certain classified patients in the Fife Asylum. It was a most interesting departure, of course greatly depending upon the geography of the asylum. One point of his paper was to give Dr. Turnbull every credit for his instituting this desirable change without knowledge of previous experience in other institutions. This department of the Copenhagen hospital was a clinical establishment such as had obtained for years in various other places. For instance, in Paris there was a clinical block in connection with St. Anne's Asylum, but this was not connected with any asylum, although insane patients passed through it to the Roskilde Asylum. He did not go into the percentage of recoveries, deaths, and so on, because the results would be misleading. If they added to the recovery-rate of Morningside the recoveries in the delirium tremens ward of the Edinburgh Infirmary they would of course get better results than at Morningside alone. They could not compare things which were so entirely different. When one talked of proposing such an arrangement for London it must be done in a most guarded way, because Copenhagen was more like Edinburgh in size, and therefore more easily arranged for.

Dr. YELLOWLEES asked if that was not what was done by the Barony parish in Glasgow, where they had a receiving house for all patients, and those who went to Lenzie were sent there first.

Dr. URQUHART thought that it was at the wrong place. He could not agree that a reception house should be in close association with any Poorhouse.

Dr. Campbell Clark had prepared a paper on "Changes and Complaints in Asylum Service," which, in his unavoidable absence, was read by Dr. TURNBULL.

A long discussion ensued, and was adjourned to the next meeting, on the motion of Dr. KEAY.

On the motion of Dr. TURNBULL a vote of thanks was given to Dr. McDowall for his conduct in the chair, and the meeting separated.

The members afterwards dined together in the Palace Hotel.

BRITISH MEDICAL ASSOCIATION.

(Concluded from Vol. XLII., page 895).

Morbid Shyness. By HARRY CAMPBELL, M.D., F.R.C.P. London.

Morbid shyness, like some other mental disorders, such as claustrophobia, is an exaggeration of a normal state. When shyness causes such symptoms as faintness, nausea, twittings, and aphasia, and when it leads the sufferer to shun society, and to develop into a suspicious, self-centred hypochondriac, it constitutes a veritable disease. The morbidly shy come of a stock in which insanity,

epilepsy, migraine, etc., are common. Shyness is a species of fear; often it is the fear of adverse criticism, though praise may be more potent to excite it than disapproval. The morbidly shy are generally self-distrustful, but they may be self-opiniated, and even vain. They may be capable of violent fits of passion, and are apt to become morbidly suspicious. They are often endowed with a fine physique and great animal courage. Dr. Campbell enumerated at length the manifestations of shyness. As regards exciting causes, the being looked at is the chief; hence the possession of a physical peculiarity may predispose to it. The morbidly shy adopt numerous devices to conceal their weakness, and are often misunderstood. Excessive shyness leads to isolation and to the many mental evils which follow in its train—no longer subjected to the corrective influence of social intercourse, the sufferer gradually drifts into eccentricity and hypochondria. Morbid shyness may disappear on the approach of insanity, but, on the other hand, it may constitute one of its symptoms.

Insanity in Children. By W. W. IRELAND, M.D.

Dr. IRELAND explained the differences between the nerve tissues and mental characters of children and adults, and showed how this made a difference in the symptoms of insanity in each. He proceeded to consider the effects of education and civilisation. He had found insanity in children uncomplicated with idiocy to be a very rare occurrence, and therefore difficult to collect a sufficient number of cases from which to generalise. The causes were then discussed, and Dr. Ireland described a case of melancholia in a girl æt. 11. The mental disorder was accompanied by mitral insufficiency, and eventuated in recovery in less than a year.

Mental Overstrain in Education. By G. E. SHUTTLEWORTH, B.A., M.D.

The author urged that there was still evidence in certain departments of education of overpressure resulting in mental overstrain. Briefly referring to true and false views of what education meant, and to the necessity of treating each pupil, not merely as a unit in a scheme, but as an individual possessing inherent—not to say inherited—peculiarities both of mind and body, he pointed out that “overpressure” was not an absolute quantity, but varied in relation to the personal factors in a given case. Adverting to past abuses, he expressed the opinion that the incidence of overpressure did not now fall, as was the case when Sir James Crichton Browne made his report some twelve years ago, especially upon the dull children in our elementary schools. Under the new code it was rather the bright children who were apt to suffer, and precocious children were often the offspring of neurotic parents, and such were apt to break down under any mental strain.

In secondary education, similarly, the incidence of mental overstrain was most felt in preparatory schools, and by young boys of promise, who were unhappily often sacrificed to the Moloch of competitive examination. In public schools and higher grade schools generally for boys, the systematic inclusion of outdoor games in the school routine was a great safeguard against overpressure. In high schools for girls, however, the risk of overstrain was much greater. There was seldom adequate provision for outdoor exercise and recreation, and, too frequently, there was an utter disregard by the school authorities of the physiological conditions of budding womanhood. Girls were expected to learn all that their brothers of corresponding age were taught, music and other feminine accomplishments being superadded. Could it be wondered at that, considering the conscientiousness in preparation and the keen spirit of emulation displayed by girls, an overloaded curriculum too often eventuated in breakdown? There was more elasticity in the women's colleges than in the high schools; but the strain of frequently recurring examinations often proved trying to those whose antecedents were neurotic.

The etiological factors conducing to mental overstrain were discussed, special reference being made to the predisposing influence of neurotic or tuberculous heredity, of malnutrition, and of menstrual irregularities, as well as to undue stimulation of brain-cells.

Amongst symptoms denoting overstrain were noted such as the following. In young children a wearied expression, with bagginess of lower eyelids, a want of tonic and balance in the muscular system, with twitchings, stammerings, jactitations, and chorea. In those approaching puberty further indications of neurasthenia appeared, such as aprosexia (inability to sustain attention), heterophemia (a tendency to answer wrong), neuralgia, sleeplessness or sopor, a general want of "pluck," and the condition which has been described as *anorexia scholastica*.

As regards treatment, prevention was better than cure; and nothing effectual could be done unless the patient were withdrawn from the conditions causing the overstrain. Then good bracing air, judicious exercise (such as tennis, rowing, or bicycling), diverting occupation, and suitable feeding were of importance; and care should be taken that no time was left for morbid introspection, for neurasthenia tended to melancholia. Ferruginous tonics were often very useful; and so were maltine and cod-liver oil, which would promote that comfortable condition of fatness which is, as a rule, closely allied with mental contentment.

Post-Influenza Insanity. By Dr. RUTHERFORD MACPHAIL, Derby.

Dr. RUTHERFORD MACPHAIL read an analysis of 20 cases of post-influenzal insanity admitted into the Derby Borough Asylum in the five years ending December 31st, 1895. This represents 4·8 per cent. of the admissions.

Of the 20 cases nine were men and 11 women. The youngest patient was a lad aged 18, the oldest a man of 71. The average ages were for men, 37·6; for women, 39·2. The largest number of cases (eight) occurred in the fifth decade. Hereditary predisposition to insanity was admitted in six of the 20 cases. In all except two the attack of insanity was an initial one. As to the form of mental disease, melancholia occurred in the cases of three men and seven women, mania in five men and four women, and one man was a general paralytic. Fifty per cent. of the cases were therefore melancholics, a larger proportion of melancholia than usual, for the records of the asylum during the five years in question show only a percentage of 20 melancholics to all admissions. The type of melancholia varied from simple depression to the acute forms, with well-marked delusions. The delusions most common in the maniacal cases were those of suspicion and of poisoning. Four of the cases were actively suicidal, and had made attempts on their lives at home.

The results were as follows:—Among the men four recovered, two were relieved, one died, and two are still under treatment and are chronic. Of the women eight recovered, one died, and two have become chronic. All the melancholics recovered except one woman, who died. The average residence in the asylum of those who recovered was three months for men and four months for women. It was worthy of note that in the cases under review the average percentage of recoveries to the total admissions was higher than usually obtains in public asylums, while the average period of asylum residence was considerably lower.

Endemic Insanity. By P. M. LAFFAN, L.R.C.P. & S. Dubl., Tara, Ireland.

Dr. LAFFAN described an area of some four square miles with a population of 300. He showed that out of the entire number of resident families some 50 per cent. were affected by insanity. The prominent facts were heredity and local alliances; but in addition Dr. Laffan brought under review certain peculiarities of the soil, and stated that cattle fed on some local pastures lose their horns, and horses their hoofs. He concluded that some pernicious endemic influence exercises baneful and subtle effects upon the nutrition of the nervous system of the inhabitants.

A Comparison between the Breaking Strain of the Ribs of the Sane and Insane.

By ALFRED W. CAMPBELL, M.D., Pathologist, Rainhill Asylum, Lancashire.

This paper was read at the Annual Meeting held in London in 1895, and forms a sequel to one entitled, "The Breaking Strain of the Ribs of the Insane"

(*Journal of Mental Science*, April, 1895). Dr. Campbell was indebted to Dr. Barendt, of the Royal Southern Hospital, Liverpool, for supplying the 8th pair of ribs of 58 cases dying in Hospital. These ribs were tested in the same way as previously detailed, and the following conclusions were arrived at.

1. Long-established doctrines would lead us to anticipate that the average breaking strain of the ribs of the insane would be considerably lower than that of the ribs of persons free from mental disease, but this is far from being correct. My tables work out as follows:—

	MALES.		FEMALES.	
	Against the Convexity.	Against the Concavity.	Against the Convexity.	Against the Concavity.
Insane	41·04lbs.	42·14lbs.	20·68lbs.	20·90lbs.
Sane	42·73lbs.	42·63lbs.	23lbs.	23·3lbs.

This demonstration of the close equality of strength of the ribs of the sane and insane would tend to show that the comparatively frequent occurrence of fractured ribs in the persons of inmates of asylums is not to be attributed so much to an increased fragility of their bones as to other causes with which we are all familiar—such as self-injury during attacks of excitement in delusive conditions, and when enfeebled by age and chronic dementia; likewise the necessary employment of unavoidably rough methods of restraint in the struggle to overcome resistiveness or to control a maniacal outburst.

2. The result of my examination shows that the average breaking strain of the ribs of those sane cases who died of some chronic wasting disease, such as *chronic pulmonary tuberculosis*, is lower by about 6lbs. than that of cases who suffered from some chronic but not wasting affection, such as *chronic Bright's disease*, and again that the ribs of cases coming in the latter category are weaker by about 6lbs. than those of cases meeting their death by accident or succumbing to an acute and rapidly fatal disease, such as *croupous pneumonia*.

My figures, therefore, indicate that the influence of chronic wasting diseases in the production of bone weakness is probably equivalent to if not greater than that of mental deterioration, but in this connection it must be pointed out that there is one form of mental disease which is unquestionably more potent in the production of bone weakness than any form of chronic wasting bodily disease—viz., *general paralysis of the insane*. Though this malady terminates the existence of persons so afflicted at that period of life when the ribs should have attained their maximum strength, it causes such a weakening of the ribs that at death their breaking strain will be found to have fallen some twenty pounds below the normal standard, and these bones are further peculiar in showing special microscopic alterations—all characteristic of acute degeneration. However, when we search for the actual or immediate cause of this low breaking strain of the ribs in general paralysis, we find that although the nervous and mental disease must act primarily in its production, it must be attributed in no small measure to the marked bodily wasting associated with the disease, and especially with its later stages, and therefore this point really favours the argument that bodily disease acts as powerfully in the production of bone weakness as mental disease. Rogers and Campbell Brown, *Liverpool Medical and Surgical Reports*, 1870, as a result of the chemical examination of some ribs of general paralytics, state that "The ratio of organic constituents to earthy matter is much greater, while the ratio of lime to phosphoric acid is distinctly less in the ribs of general paralytics than in those of healthy adults. There are the same differences between the composition of healthy ribs and those of paralytics as between the composition of adult bones and those of the fœtus, and generally the composition in cases of paralysis approaches that observed in cases of osteomalacia."

3. Just as in the insane one occasionally came across ribs with an extremely low breaking strain, so in those not mentally afflicted a certain small proportion of cases possessed ribs of exceptional weakness. Not only did these ribs on microscopic examination reveal pronounced architectural defects, but also, apparently

owing to a diminution in the density of the osseous elements, they were so softened that they could be readily sliced through with a sharp knife, and they could be bent like a soft metal tube of flattened shape. It would appear that in these cases we have to deal either with a reversion to that osseous condition which obtains in childhood, or with a condition similar to that occasionally found in *tubes dorsalis* and *syphilis*, or even with a change allied to *mollities ossium*. It is more than likely that this is dependent upon some chemical change, the exact nature of which we still remain ignorant of, combined with structural alterations.

The ribs of two women from the Royal Southern Hospital furnish excellent examples of this condition. One, æt. 60, died of senile decay; the other, æt. 50, succumbed to malignant disease of the uterus, and both cases yielded the extraordinary low breaking strain of five pounds. (So far as I have gone in my experiments this is a record for frangible ribs.)

Dr. Wiglesworth, "On Bone Degeneration in the Insane" (*Brit. Med. Journal*, 1893), found in three out of thirty cases in which he carried out a microscopic examination ribs which from his description might well be classed in this category. The subjects from which these ribs were taken were all well on in years, and the structural change was of an osteoporotic nature, and probably akin to the senile osteomalacia of Cornil and Ranvier.

It might also here be noted that this writer was fully alive to the importance of wasting disease and impairment of general health in the production of structural alterations in the ribs.

Cases such as these may be considered to be the Assistant Medical Officer's bugbear, for, as I have previously pointed out, owing to the incompleteness of the disunion in fractures of such ribs, not only does an absence of the three cardinal signs, crepitus, movement at the site of fracture, and displacement, increase the difficulty of detection a hundredfold, but also, so far as I am aware, there are no definite indications upon which a diagnosis of fragile bones may be founded during life. The single guiding line that I can offer is that all the cases I have seen have occurred in persons of advanced or moderately advanced years.

4. The influence of sex, age, and stature all stand in important relation to the breaking strain of the rib in the sane as well as in those mentally afflicted. In both classes the male rib possesses, roughly speaking, double the strength of the female rib. Then after the age of 35 the fragility of the rib in both classes and in both sexes increases progressively with advancing years, and microscopic examination proves that senescence is accompanied by a metamorphosis of the red marrow of the rib and a deposition therein of fat, along with a progressive decalcification and wasting of the bone. In short, a change occurs similar to that which is described as taking place in *mollities ossium*.

It was interesting to note the breaking strain of ribs of cases in which the cartilages had undergone the senile alteration of calcareous degeneration. In some instances calcareous cartilages were associated with ribs of strong resistance, but in others the effect was exactly the contrary, and one assumes that in the former a coincident deposition of lime salts occurs in both cartilage and bone, affording strength to both, whereas in the latter lime salts have been abstracted from the bone to its detriment and deposited in the cartilage.

5. Lastly, the breaking strain of the ribs is more or less proportional to the skeletal and muscular development of the individual. As in my former paper, microscopic examination revealed architectural deficiencies in all those ribs which broke at a low strain. These were alterations from normal in the shape and size of the rib, a diminution in the thickness of the investing rim of compact bone, a dilatation of Haversian spaces, and an absorption of or a simplification of the arrangement of the cancellous trabeculae.

MEDICO-LEGAL CASE.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

Reg. v. Rennison.

Joseph Frederick Rennison, 18, labourer, was indicted for the murder of Ellen Whatmough.

The prisoner entered the house in which the deceased lived, and saying that he had come to look at the gas meter, borrowed a hammer and tapped the boards with it. He then attacked the deceased, and with the hammer inflicted wounds of which she died. There appeared to have been no quarrel between the prisoner and the deceased, and the latter appears not to have known the prisoner. There was no suggestion of robbery as a motive—indeed, no motive was suggested. The facts were not disputed.

Dr. Mould, Superintendent of the Cheadle Hospital, gave evidence that he had interviewed the prisoner, who said that he had suffered from attacks of blindness and unconsciousness for short periods, and had for this reason been discharged from the service of a Railway Company. Witness stated that the prisoner had had several slight epileptic seizures. Witness was of opinion that the prisoner was unconscious when the act was committed, and might as probably have smashed the furniture as committed the act he did.

Dr. Rooke Ley, Superintendent of the Prestwich Asylum, believed that at the time the act was committed the prisoner was "perfectly sane." There was no evidence of epilepsy whatever. He could find no history of epilepsy either before or after the crime.

The jury found the prisoner guilty, and he was sentenced to death.—*Manchester Summer Assizes, July 15th (Mr. Commissioner Dugdale).—Manchester Guardian, July 15th.*

Upon the evidence the jury could have found no other verdict. When insanity is set up as a defence, the presumption is against it, and it must be proved. When two medical men of equal experience give diametrically opposite evidence, their opinions cancel each other, and the matter remains as it would have been if neither of them had been called. Under such circumstances the plea of insanity cannot possibly be established, and, the facts being admitted, the prisoner must be found guilty. The cause of the difference of opinion is quite clear. Dr. Mould, impressed with the utterly motiveless nature of the crime, seeks for an explanation of it in post-epileptic automatism, and, finding some history of attacks that may have been epileptic, regards the explanation as proved, and has sufficient faith in his opinion to state it in Court. Dr. Ley, on the other hand, severely practical, puts it that if the prisoner was insane at the time of the crime he would exhibit some sign or some history of insanity, and, failing to elicit any such sign or history, he regards the prisoner as "perfectly sane." It is not for us to judge between two gentlemen of such experience, both of whom had the advantage of examining the prisoner. What we have to point out is that this is a typical example of those cases, which have been so severely commented upon, in which a verdict of guilty, arrived at in open Court, is subsequently set aside, and the prisoner respited during her Majesty's pleasure. It was, as has been shown, inevitable that a verdict of guilty should be returned. Upon the evidence no other verdict was possible. It was inevitable also that this verdict should be subsequently reviewed, and an examination of the prisoner, with regard to his mental state, made after the trial. At this examination inquiries could be made, and facts elicited, which could not, under the rules of evidence, however much they might have been relaxed by the judge, have been brought forward at the trial; and which, if they could have been then brought forward, the jury would not have been able to estimate at their proper value. As a result of this examination the prisoner has

been respited, and thus both Dr. Ley and Dr. Mould are justified in their opinions, the first by the conviction of the prisoner, and the second by his respite; and what is, perhaps, as important, substantial justice is done both to the prisoner and to the community which he had so grievously wronged.

KLEPTOMANIA.

The wealthy American lady, Mrs. Castle, recently tried at Clerkenwell, and sentenced to three months' imprisonment in spite of Sir Edward Clarke's defence, has been set at liberty, but at what cost of mental anxiety to herself and to her unhappy friends. At the trial it was conclusively proved that she had no need for the articles stolen, and that her past history showed similar aberrations. Drs. Savage and Gabriel are reported to have stated in court, *after she pleaded guilty*, that "she was suffering from disorders which had so mentally affected her as to render her not responsible for her actions." Is there not something very much amiss in this procedure? Is it seemly that any person should be found "guilty," and immediately thereafter, evidence should be led to mitigate or nullify the sentence? The late Committee on Criminal Responsibility appointed by the Medico-Psychological Association excluded minor offences from their consideration; but the matter cannot rest while such cases as this recur from time to time. Is there any reason why the victims of mental disease should not be dealt with as insane offenders, why some such procedure as is prescribed by the Scottish Lunacy Act for 1862 (Sect. 15), should not be made generally applicable? By that enactment the Sheriff can, if satisfied, order the delivery of the sufferer to a friend or relative for the purpose of proper care and treatment; and thus in open court or *in camera* obviate the scandals following upon such incidents as we now mention.

INSURANCE AND SUICIDE.

An important case was tried in the Court of Session in June. The questions at issue were whether the late Captain Sangster met his death accidentally, whether he had failed to use due diligence for his personal safety and protection. From the evidence it appeared that he had gone to Crieff Hydropathic for a change, and that he had proceeded to Loch Earn, where he was seen rowing about in a boat on the evening of the 30th April, 1895. Next day his clothes were found neatly folded up in the drifting boat. The Insurance Company refused to pay the policy of £1,000, averring that Captain Sangster had committed suicide, or that he had failed to take proper care of himself.

From the medical point of view it was stated for the Insurance Company by Dr. Gillespie that he did not think the fact of the clothes having been found in the boat displaced the theory of suicide. Suicides were often secretive. He knew of a case of suicide from drowning in which the person had stripped himself of his clothes.

Dr. Urquhart was of the same opinion. The fact that no signs of melancholia had been observed did not exclude the possibility of suicide. If the person did not intend to commit suicide he ran a very grave danger by bathing under the circumstances mentioned.

Dr. Clouston concurred, and laid stress upon the circumstance that Captain Sangster should have suddenly resigned his position as Marine Superintendent without conferring with his employers.

Lord Stormonth-Darling, in giving judgment, said—(1) that Captain Sangster was drowned in Loch Earn on the evening of 30th April, 1895; (2) that he died by accident, and not by suicide; and (3) that there was not on his part such want of diligence for his personal safety, or such wilful, wanton, or negligent exposure

of himself to unnecessary danger as to relieve the defenders from liability under the policy. With regard to the first of these conclusions there can be no doubt; it is on the second and third that the controversy arises. "The notion of what the doctors call 'sane suicide'" is out of the question. There may be strong, though I suppose there never can be sufficient, reasons for self-destruction; but no such reason existed in Captain Sangster's case. . . . The only possible theory to account for suicide is that he was in the earliest, which is said to be also the most dangerous, stage of melancholia. The defenders' case on record gives an air of plausibility to this theory. It is said in effect that for some time back he had been in a desponding state about his health and his fitness for his duties; that under the influence of this feeling he resigned his situation . . .; that he left home on 29th April, and wrote the same night to his nephew, sending back the larger part of the money which he had taken with him; that he left Crieff next morning without telling any one where he was going, arrived at St. Fillans in the evening, engaged no room for the night, and went out alone in a boat on a cold and stormy night. Two additional suggestions not mentioned on record were made in the course of the proof as strengthening the theory of morbid despondency. One that he ate nothing from breakfast onwards, the other that he walked along with his head down and spoke to nobody. Now, some of these things are disproved and others are capable of explanation. Such evidence as there is shows that he had not only breakfast, but luncheon, at Crieff, and he certainly had a glass of port and a biscuit (which his doctor had recommended) both at Comrie and St. Fillans, and at each of these places he spoke quite cheerfully and pleasantly to the persons who served him. It is true that he had resigned his situation, and had insisted on doing so, notwithstanding the entreaties of his employers that he should remain. It is also true that he put forward as his reason partly that his health had not been good, and partly that he did not feel himself equal to his duties. But it appears that for some time he had found these duties irksome, though he discharged them to his employers' entire satisfaction, and he thought he would be happier in command of a ship trading to the East. As this resolution would almost certainly have removed him from the service of the Messrs. Thomson, who had been exceedingly kind to him, it was quite natural that he should magnify any reason which would seem to make the step he was taking almost a necessity. It was also true that he sent back some £15 from Crieff; but he had received payment of a month's salary just before leaving Dundee, and he retained £8, and said that he would write for more if he wanted it. His visit to St. Fillans, his going out in the evening to row, even his bathing at so comparatively late an hour on an April day, are made much less surprising than they would otherwise have been when we know that he was an impulsive man, accustomed to boats, and fond of bathing, and that he had not only been taking baths in extremely cold water on his last voyage, but had been advised by his doctor to use cold water as a means of recovering tone. Indeed, that and the use of port wine and a tonic had been the only prescriptions given him, for his bodily organs were all in sound condition, and there was nothing wrong with him except that he was rather fagged. Even the omission to make any arrangements for the night is explained by the fact that he might either have engaged a bed at the inn on returning from his row or he might have spent the night in the house of the witness Menzies, with whom he had lodged a few years before. Accordingly, I find in the evidence nothing to suggest morbid despondency or to make suicide a reasonable inference. If he was melancholy-mad, it is a most extraordinary thing that such an idea never crossed the mind of any one with whom he came in contact. On the other hand, it seems to me almost incredible that a swimmer desiring to drown himself should have taken pains to make the operation as difficult as possible by taking off all his clothes. I find it much easier to believe that an impulsive man, accustomed to boats and to cold water, should have suddenly resolved to have a swim on the evening of what had been for the season an exceptionally warm day, forgetting that the deep water of a Highland loch is void even after a warm day, and that cramp is a danger which may prove fatal to the best swimmer if he bathes where he can get no help."

¹ On appeal, the First Division of the Court of Session on 28th October, 1896, concurred in the finding of Lord Stormonth-Darling, and gave decree as sued for with expenses.

This case is of interest in respect of the rejection of the medical evidence in favour of suicide, as above set forth. In brief, it did not seem possible for the judge to accept the statement that the initial stage of melancholia is not apparent to the man in the street. Yet, about the same time as this trial, the newspapers were printing the circumstances of Lady Mary Bligh's suicide; how she was found drowned after having entered the water divested of clothing; how her father stated that "it was not the fact that she had been in a very depressed frame of mind, or a despondent state of mind. Battling with ill-health though she was, she was uniformly cheerful and the brightest of companions. It is absolutely untrue that she had a love affair. That she was ever seen weeping bitterly in her walks must appear to those who knew her most unlikely. There can be no doubt that she acted as she did under some uncontrollable influence, rapidly developed, which at once deprived her of reason and overcame her will, which those who most lately conversed with her know was to live, not to die."

DR. A. JAMES ON CRIME.

At a recent meeting of the Medico-Chirurgical Society of Edinburgh Dr. James read a paper on "Crime," which is of interest, as representing the thoughtful conclusions of an able general physician in regard to this subject. Dr. James pointed out the analysis of crime, pauperism, and insanity in the constancy of numbers year by year. Just as diseases occur and cause death in a wonderfully constant number, so do crimes happen. He pursued this subject in regard to liability at different ages, and showed the dependence on season, temperature, weather, and so on. Dr. James entered at some length into questions of social relationships—the influence of trade, the preponderance of crimes against property in bad times, of crimes against the person in prosperous times. He showed how the crimes of the people are like themselves innately, and how the environment influences the criminal, and how the criminal is generally behind the age, although sometimes in advance of it.

Dr. James concluded by reference to the treatment of crime, and emphasised the necessity for treating the criminal rather than the crime. While acknowledging the usefulness of primitive measures to aid defects of action in the higher evolved centres of mind, he laid down the principle that all criminal law should be founded on natural science, and that special education in this respect is necessary for those who make the laws and those who administer them. Dr. James would have the governors of gaols competent in physiological psychology, and would enlarge their powers for detention or dismissal of criminals. He advocated greater publicity in affairs of business, and an extension of education in the best sense for all. He looked upon the improvement of the social condition of women as an important factor in the decrease of crime.

The discussion which followed was of an interesting nature, and will be published in full in the *Transactions of the Medico-Chirurgical Society of Edinburgh* for 1896-97.

ARCHITECT ASSESSORS.

It is of great importance, when new asylums are being erected in different parts of the country, that the best advice should be sought by those responsible for the after working of these institutions. There are now, at the service of the public, men who have given long and special attention to the many and intricate questions arising out of the continuous necessity for additions to asylum accommodation. There is a danger in adhering too rigidly to the traditions of asylum

construction, and there is also a danger in proposing changes which will not work out in practical detail. When an Asylum Committee decide to build they should forthwith appoint the Medical Superintendent, and when the plans are complete these should be submitted to the scrutiny of experts.

We understand that Mr. Sydney Mitchell, who designed Craig House for the Royal Edinburgh Asylum, the separate hospital for the Royal Asylum at Montrose and other similar institutions, has been appointed to act as sole assessor in selecting the designs to be premiated for the new Belfast Asylum. Mr. Hine, who designed notable additions to the Nottingham Borough and the Dorset County Asylums, as well as the vast buildings at Claybury and the new asylum at Bexley Heath, for the London County Council, was similarly associated with Mr. Mitchell in regard to the new Dublin Asylum at Portrane. These gentlemen are to be congratulated on having attained this eminence in their profession, and there is every reason to believe that Ireland will benefit from their mature and prudent counsels.

WORDS OF FAREWELL

By the Rev. H. Hawkins.

"Allow me to say 'Good-bye,' that is God be with you before you go. It is an old saying—'Welcome the coming, speed the parting guest.' We should consider ourselves rather as members of a large family than parts of a vast living machine, and should take interest, as far as we can, in one another's movements and well being. So let us exchange a parting friendly farewell. After service here, longer or shorter, you are going to leave this asylum, its work, its patients and companionships. You will not forget them. You will sometimes have in kindly remembrance your old wards, with many of their inmates; your former fellow, workers, and others with whom you have been associated—the medical staff, matrons (may I hope the Chaplain?) and others. Do not let the asylum and its inmates when (as soon they will be) out of sight be altogether out of mind. Your sojourn here is a part of yourself—the various stages of life are 'bound each to each.' But do not merely give a thought, now and then, to this large household, but consider whether you cannot *still* do it good, just a little. May I suggest one or two ways in which this might be done?

"1. Might not an attendant, before leaving, select some patient in her ward whom she might, as it were, 'adopt?'—writing to her from time to time, not frequently, but regularly, sending her an occasional newspaper or an almanack, or perhaps a few stamps. Would not this be a pleasant bond of union between the new life and the old? between now and then? If the 'adopted' patient should be discharged or die, her place might be taken by another. The Head Attendant or 'Charge' might be willing kindly to forward a name. If this could not be easily managed, a paper (illustrated all the better) addressed to the old ward would, perhaps, reach some patient whose thoughts might be diverted, for awhile, from cares and troubles through your considerateness. Anyhow, in some way or other, keep the asylum and its indwellers in remembrance. Forget not the community in which your lot was once cast when you make your requests before God. The 'afflicted in mind,' as well as those in body and estate, are not unremembered in the Church's petitions, and, for private use, a form of prayer which has been put into the hands of very many, and which not a few may be using, will be found at the end of this letter.

"2. Again, as far as you can with truth, *speak favourably* of the asylum and its management. No institution is perfect, no workers are faultless. You may have become acquainted with some things in the asylum which you are about to leave which are capable of amendment. There, as elsewhere, occur occasional faults of temper, hastiness of speech, want of gentleness, &c. Where is there *not* something to be desired? The members of any establishment are part of the great human family, liable to errors and defects which are common to all. But you have also had experience of the manner in which the well-being of the inmates of the

House—patients and staff—has been carefully attended to. You have noticed many instances of much patience shown under provocation, of kindly words and actions, of trouble cheerfully taken, of money freely spent for the benefit and comfort of all around; so, when you have opportunity, say a good word for the institution. Kindly mention, may help to correct mistaken opinions held by many persons about asylum ways. Prejudice may be removed, or lessened. The unwillingness of friends to send patients, needing such treatment, to an asylum, may be diminished in some case, through your recommendation, which will have weight, coming from one who speaks from personal experience.

"3. Should you know of any young person in search of employment, who would be likely to become a good attendant, you might confer a benefit both upon herself and others by putting her in the way of applying for service, with particulars about age, health, previous occupation, &c. Moreover, you might give her some friendly advice which would be useful if she became a nurse.

"And now, accept good wishes on leaving for your future life. Whether you are going to be married, or to take service elsewhere, or to return awhile to your old home, may God's blessing be with you in the years to come, and hereafter."

CORRESPONDENCE.

FROM DR. LOCKHART ROBERTSON.

In looking through the report of the Annual Meeting in the Journal, I note the report of the Hack Tuke Committee. May I, as a subscriber and old friend of Dr. Hack Tuke's, venture to say that I have a strong impression that we are already overdone with Prize Essays, which are usually rubbish; and may I also suggest that we follow the example of the College of Physicians in the Moxon Medal, which is given by the College at fixed intervals as a gold medal on the recommendation of the Council to the most distinguished psychologist, English or foreign, by or for good work done by juniors. Dr. Tuke's head would look well on a gold medal. We might, perhaps, be able to give it every fifth year in gold, or in silver yearly, which I think would be better. The Moxon fund is £435, and yields at $2\frac{1}{2}$ per cent. 10 guineas. We should only have five guineas yearly, which would give a gold medal probably every third year, a silver one every year.

RESIGNATION.

Dr. Carlos F. Macdonald.

Many of our members, who know Dr. Carlos F. Macdonald, as President of the New York State Lunacy Commission, will congratulate him on the honourable recognition of his services which has been manifested on his retirement, and wish him equal honour and success in any new field of activity that he may enter on. Dr. Wise, of Ogdensburg, has been appointed as his successor.

OBITUARY.

SIR BENJAMIN WARD RICHARDSON.

Sir Benjamin Richardson was elected an Honorary Member of the Medico-Psychological Association more than a quarter of a century ago, and repeatedly enriched the pages of this Journal with contributions from his active and powerful pen. In the wide range of his interests and investigations he could not fail to include such subjects as lie nearest to our special work. In 1869 he read a paper at the York Meeting on "Physical Disease from Nervous Strain," and so lately as

1892 he addressed a meeting held in his own house on "The Cerebro-Spinal Axis as a Thermal Centre and Water Power." Few who heard him on "Cycling" at a recent debate in London will forget the old man eloquent—retaining his enthusiasm, and persevering in his service to Hygeia. We need not enter into details as to his life and the value of his work, for the newspapers, lay and medical, have been generous in recording his worth and services to mankind. We cannot, however, fail to make acknowledgment of his ready and kindly aid to the Association whenever called on, and must join in expressing our deep regret and sense of the loss sustained by the death of Sir Benjamin Richardson

DR. LANGDON-DOWN.

By the death of Dr. John Langdon Haydon Langdon-Down, M.D., F.R.C.P. Lond., on October 7th, the profession has lost a distinguished member, and the psychological specialty an expert in the treatment of mentally deficient children. One of Dr Down's characteristics was a determination not to sink the broad views of the general physician while carrying out the special work of the care of the imbecile, and the fact that he acted as Assistant Physician to the London Hospital from 1859 to 1868, whilst responsible for the onerous duties of Resident Superintendent of the Earlswood Asylum, was a proof of his energy and of the versatility of his powers. The subsequent establishment of Normansfield as a home for the mentally-afflicted children of the upper classes was a signal evidence of the capacity for organisation displayed by the doctor, and, we may add, Mrs. Langdon-Down. Many of our readers will be familiar with this institution, which has from time to time been the scene of lavish hospitality to the medical profession; and from the experience there gained, as well as from his earlier experience at Earlswood, Dr. Langdon-Down was able to present in 1887 to the Medical Society of London a concise but comprehensive account of the "Mental Affections of Childhood and Youth," which formed the subject of his Lettsomian Lectures. He was the author of several papers relating to imbecility in the *London Hospital Reports*, and of an article on that subject in *Quain's Dictionary of Medicine*, and of numerous contributions to medical journals. His handsome presence and courteous manner rendered him a conspicuous and welcome member of any assembly of his *confrères*, and many of our metropolitan associates will remember his readiness in his capacity of Magistrate to aid them in the difficult duties imposed on them by the new Lunacy Law. Many, indeed, there are who can bear testimony in the case of Dr. Langdon-Down to: "Those best parts of every good man's life, his little nameless, unremembered acts of love and kindness."

DR. W. Z. MYLES.

We regret to record the death of Dr. William Zachary Myles, of Kilkenny, an old member of our Association. Dr. Myles belonged to a well-known Limerick family. He took Scottish diplomas. He was on the medical staff of the Richmond Asylum, Dublin, for more than eleven years, being senior A.M.O. for eight. Owing to his lack of the interest usually required in Ireland, his promotion was not rapid, though he was much esteemed. In May, 1888, he was appointed by the Lord Lieutenant to be Medical Superintendent of the District Asylum at Kilkenny, an office which he held up to his death. He died on December the 13th, at the early age of 45. Dr. Myles had long been in delicate health. He contracted phthisis while an assistant in the Dublin Asylum. This affection, however, assumed a very chronic type, and he became apparently fairly strong after he went to Kilkenny. He worked under exceptional difficulties, the habitual contests between the Board of Control and the Board of Governors assuming occasionally at his asylum the most acute forms—a circumstance which must

necessarily have hampered and obstructed all reform. Thus a few years ago, after a difference with the Board of Control, the Board of Governors, with, we understand, one or two dissentients, resigned office *en masse*, and were with difficulty induced to resume their functions. Nevertheless, Dr. Myles succeeded in effecting many improvements, and earned for himself the character of an advancing worker and kindly physician.

NOTICES BY THE REGISTRAR.

Examination for the Certificate of Proficiency in Nursing.

At the November Examination for this Certificate 168 candidates presented themselves for examination. Of this number 136 were successful, 14 failed to satisfy the Examiners, and two withdrew from the examination, while the result of the examination of 16 candidates has not yet come to hand.

The following is a list of the successful candidates:—

Cheshire County Asylum, Macclesfield.—*Males*: Thomas Ainsworth, James Carter, David Gilliespie, William Hancock, Ernest Keeble, Tom Frank Murray, Hugh Matthews, James McGrath, William Noble, William Nield, William Peden, Frederick Sherriff, Samuel Scragg, Joseph Timmis, Frederick William Tite, James Whelan. *Females*: Jane Bryne, Ellen Clancy, Harriet Caroline Ferguson, Emma Horton, Amelia Johnson, Jane Johnson, Elizabeth Jane Kemp, Annie Priddey, Elizabeth Ann McGrath, Jane Mottershead, Mary Lupton, Lily Sullivan, Margaret Stubbs, Rose Annie Wood.

Kent County Asylum, Chartham.—*Male*: Herbert Royall.

Kent County Asylum, Barming Heath.—*Males*: Thomas Henry Catt, Henry Cole, Alfred L. Dunkin, Thomas W. Gibson, William Geo. Hewitt, Charles Amos King, William Hy. Wheeler. *Females*: Annie Bruce, Sarah Ann Hulse, Alma Elizabeth Larkin, Fanny Robinson.

Northumberland County Asylum, Morpeth.—*Females*: Agnes Badley, Sarah Annie Hall, Annie Rochester, Fanny Runcieman.

Norfolk County Asylum, Norwich.—*Males*: Moses S. Crabbe, Charles Edward Fox, George Powell. *Females*: Jessie Elizabeth Back, Margaret Kemp, Alice Curtis, Annie Jordan, Annie Missen, Charlotte Simpson.

Stafford County Asylum, Stafford.—*Females*: Mary Lewis, Clara Jones, Lucy Wild.

Plymouth Borough Asylum.—*Males*: Frederic Neve, Thomas Henry Oliver, James Fox.

Sunderland Borough Asylum.—*Males*: James Anderson, Lewis Calder Alexander Malcolm Stewart, Thomas William Watson.

The Holloway Sanatorium.—*Males*: Sherrif Blades, William H. Elton, Charles Ives Fisher, John Pike, George Tappin. *Females*: Frances A. Chester, Romana D. C. I. A. de Lazen, Helena E. Golding, Alice M. Mactaggart, Amelia Lucy Russell, Jane Elsie Sellens, Minna Worts.

Bethnal House Asylum, London.—*Males*: George Darham, William Minns, Frederick Spratt. *Females*: Elizabeth Collins, Ada Jewell.

The Royal Asylum, Edinburgh.—*Females*: Sarah A. Durling Apps, Mary Buchanan Darney, Edith A. Elkins, Margaret I. Forsyth, Sarah Pyper, Christina Spence.

The Royal Asylum, Dundee.—*Male*: James Joss. *Females*: Ann Margaret Aitkin, Christina Fraser, Caroline Gavine, Maggie Mann, Frances M. Mitchell, Bella Sheppard.

Woodilee Asylum, Lenzie.—*Males*: Norman Campbell, William Wood. *Females*: Janet Campbell, Janet Dick, Annie Munro, Margaret Wilson.

Inverness District Asylum.—*Males*: William Carr, Donald Macdonald George Mackenzie. *Females*: Mary P. Ballantyne, Margaret G. Thomson.

The District Asylum, Cork.—*Males:* James Kehoe, Robert Jackson, John O'Sullivan, Joseph Simpson, Patrick Sullivan. *Females:* Margaret Murphy, Nora Murphy, Kate Sullivan, Ellen Sheehan, Elizabeth B. Tolerton.

The District Asylum, Omagh.—*Males:* John Sharkey, James Shannon. *Females:* Mary Anne Armstrong, Sarah Jane Ompbell, Mary Donnelly, Jane Doherty, Mary McWilliams, Isabella McHugh, Rose Anne McTeggart.

The District Asylum, Ballinasloe.—*Males:* Thomas Beegan, James Lally, Hugh Tully. *Females:* Ellie Hannon, Maggie Hill, Mary McLoughlin, Mary A. Nevin.

The District Asylum, Carlow.—*Males:* Thomas Barnett, Michael Kirwan. *Females:* Mary Clarke, Mary Haully.

The following is a list of the questions which appeared on the paper:—
1. State the names and relative positions of the bones forming the joints of the shoulder, elbow, and knee. 2. Distinguish between an artery, a vein, and a capillary. 3. Describe briefly the course of the circulation of the blood, beginning and ending at the right auricle. Mention the chief changes in the blood caused by respiration. 4. What are the special senses? Give the names of their organs and the nerves supplying them. 5. What is the average temperature of the body in health and the variations commonly met with in asylum patients? 6. Describe an epileptic fit, and state what precautions are to be taken while it lasts. 7. Mention the more striking (a) physical and (b) mental symptoms in an ordinary case of general paralysis of the insane. 8. What is ventilation, and why is it necessary to ventilate a room? 9. What is chiefly to be attended to on admission of a patient? 10. What precautions would you take to prevent the occurrence of bedsores? State the parts of the body to which you would pay special attention.

Three hours allowed to answer this paper. The questions are valued at 10 marks each; two-thirds of the possible total of marks are required to pass.

Next Examination.

The next examination will be held on Monday, the 3rd day of May, 1897, and candidates are earnestly requested to send in their schedules duly filled up to the Registrar of the Association not later than Monday, the 5th day of April, 1897, as this is the last day upon which, under the rules, applications for examination can be received.

For further particulars respecting the various examinations of the Association apply to the Registrar (Dr. Spence, Burntwood Asylum, Lichfield), addressing letters in the first instance to 11, Chandos Street, Cavendish Square, London, W.

Subjects for the Bronze Medal and Prize, 1897.

The President (Dr. Mickle) has suggested the following subjects for the Essay for the Bronze Medal and Prize of ten guineas, which is open to all Assistant Medical Officers of Asylums, but candidates are at liberty to present an essay on any other subject if they prefer to do so.

- (1) Heredity in relation to Insanity.
- (2) The rôle of Syphilis in the production of Mental Disease.
- (3) A contribution to the Study of Microscopical Change of the Nervous System in Mental Disease.

The Registrar will furnish further particulars if desired.

NOTICES OF MEETINGS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

General Meeting.—The next General Meeting will be held at the Notting-ham Borough Asylum, on Thursday, February 18th, 1897.

South-Western Division.—The Spring Meeting will be held at Barnwood House Asylum, Gloucester, on Tuesday, 27th April, 1897.

Scottish Division.—The Spring Meeting will be held in Glasgow on Thursday, 11th March, 1897.

Irish Division.—The next Meeting will be held in Dublin early in April, 1897.

INTERNATIONAL MEDICAL CONGRESS.

The next Congress will be held in Moscow, in August, 1897. The section of nervous mental diseases is under the direction of Professors Kojewnikow, Korsakow, and Roth of Moscow. The secretaries are Priv.-Doc. L. Minor and Priv.-Doc. W. Serbski, of Moscow. The themes inscribed on the programme are as follows:—

Neuropathology :

- (1) Pathology of the nerve cell (finest structure and its pathological changes).
- (2) Pathological anatomy and pathogenesis of syringomyelia.
- (3) Pathogenesis and treatment of tabes dorsalis.

Psychiatry :

- (1) Obsessions and fixed-ideas.
- (2) Pathogenesis of general paralysis of the insane and delimitation of this disease from its cognate forms.
- (3) Hypnotism and suggestion in their reference to mental diseases and medical jurisprudence.

The question of the surgical treatment of the brain and spinal cord diseases will moreover be discussed by our Section in her united sitting with the Surgical Section.

BRITISH MEDICAL ASSOCIATION.

The Annual Meeting of 1897 is to be held in Montreal upon Tuesday, 31st August, and three following days. The British Association meets in Toronto from 18th to 27th August, so that it will be possible to attend both without loss of time.

The President Elect is Professor Roddick, and Professor Adami, as one of the Secretaries, attends to all correspondence with this country. Address, 2,204, St. Catherine Street, Montreal. Full particulars are published in the *British Medical Journal* of 5th December, 1896.

APPOINTMENTS.

AVELINE, H. T. S., L.R.C.P., M.R.C.S. (Assistant Medical Officer Bristol City Asylum), has been appointed Medical Superintendent of the new Asylum at Catford, near Taunton, Somerset.

CALDECOTT, CHARLES, M.B., B.S.Lond., M.R.C.S., L.S.A. (Medical Superintendent, the Grove Sanatorium, Jersey), has been appointed Resident Medical Superintendent to the Earlswood Asylum for Idiots and Imbeciles, *vice* Dr. Corner, resigned.

CAMPBELL, A. KEITH, M.B., C.M. (Assistant Medical Officer Perth District Asylum), has been appointed Assistant Medical Officer to James Murray's Royal Asylum, Perth, *vice* Dr. Hay, resigned.

HAY, F., M.B., C.M. (Assistant Medical Officer James Murray's Royal Asylum, Perth), has been appointed Medical Superintendent of Ashburn Hall Private Asylum, Dunedin.

LEGGE, R. J., M.D., (Assistant Medical Officer Derby County Asylum), has been appointed Medical Superintendent there, *vice* Dr. Murray Lindsay, retired.

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VOL. XLIII.

PART I.—ORIGINAL ARTICLES.

*Atypical and Unusual Brain-Forms, especially in Relation to
Mental Status: A Study on Brain-Surface Morphology.*

By W. JULIUS MICKLE, M.D., F.R.C.P. (London),
President Medico-Psychological Association.

(Continued from p. 32, January, 1897.)

CHAPTER VII.

CENTRAL GYRES AND FISSURE (*fissure of Vicq d'Azyr;
fissure of Rolando*); WITH THE INSULA AS ANNEX.

There is convenience in dealing with the anterior and posterior central, or middle, or transverse, gyres (ascending frontal and parietal), in companionship with the central fissure, and without prejudice to this fissure as a boundary line between frontal and parietal lobes; although one might say much for a distinct "central" or, better, *transverse* lobe; of which the Insula may be taken as an annex.

If the fissure is named after any observer, Vicq d'Azyr should at least share the honour, having described these parts so far back as 1786. Broca has told the tale of how Leuret came to give the whole credit to Rolando and name the fissure after him, being misled by a later edition of the works of Vicq d'Azyr, but spurious and falsely alleged to be complete. The qualifying word *middle*, used by the last-named for the convolutions, is in one respect better than "*central*."

The parietal incisions (of Broca; in Man, 1, 2, or 3), are prolongations on the upper Sylvian coast of furrows limiting the deep or transverse parieto-temporal annectants, and notch the lower part of the inferior parietal lobule or of its foot

joining the posterior central gyre ; or of the posterior central gyre itself.

TRANSVERSE PRECENTRAL AND TRANSVERSE POST-CENTRAL SULCI.

For a considerable number of years past, I have been familiar with two tertiary sulci of the central gyres both situated at, or by, the lower part of these.

One of them (*transverse precentral sulcus*) in its most typical form is a short furrow, beneath the central fissure, directed obliquely upward and forward on the lower end of the anterior central gyre and on the opercular annectant gyre joining it with lower end of posterior central gyre ; and seen, also, on the inferior opercular aspect. On the external surface, it may enter the central fissure and form a superficial connection between this and the Sylvian ; or it may run up and furrow the lower external surface of the anterior central gyre ; or, more often, may take a slightly different course upward and forward ; and then, when long, may abut upon, or enter, the inferior precentral sulcus. If entering the lower end of the central fissure, it may be represented by a nearly vertical furrow ; or by one obliquely set, forming a downward and backward spur, or occasionally, when well to the front, an upward and forward spur, from the end of the main line of the central fissure ; its union with which is, at least usually, marked by a deep annectant gyre, obliquely crossing the fissure.

Consequently, much variety obtains in the condition of the sulcus. For it may be isolated, and situated entirely on the external surface near the opercular border, or may also run deeply into the Sylvian. It may join the inferior precentral sulcus, and either continue it into the Sylvian or fail to reach the latter. Or it may join the central fissure ; or almost unite with both it and the inferior precentral. Yet it may be slight, or doubtful, or absent.

The other of the two (*transverse post-central sulcus*) sometimes forms an incision of the parietal operculum between the posterior central and supra-marginal gyres, or of the lower part of the former of these. It occasionally mediates a somewhat shallow connection between the central fissure and the Sylvian ; but, more often, of inferior post-central sulcus and Sylvian. In a few cases it gets unusual length, but it varies in position. It also varies in direction, and from that of an upward and slightly backward line to a nearly

vertical one; or far more frequently, an upward and forward straightish line or zigzag. Cutting out and through from the Sylvian deeps, it may be separated by a somewhat sunken, or by a superficial, gyrel from the inferior post-central sulcus; or it may lose itself deeply in the long bold line of continuous confluent post-central furrows.

Thus, these two sulci differ much in different cases as to form, length, depth, direction; as to whether they boldly cleave the gyri and distinctly rise from the Sylvian; or only notch the opercular edge, or fail to do so and repose on the external opercular and gyral surface; as to whether they assume the aspect of a cleft, or of a furrow, or partly of both. The modifications are numerous in the case of either; but in the case of either the thing itself may possibly be one. Indeed, from a number of considerations I was somewhat inclined to formulate the hypothesis that these two sulci are those which when taking one form and direction produce the furrowing of central gyres from the Sylvian which I have described as a deviation from usual form; that they are those which when taking a certain position have been described by some as incisions of the frontal and parietal opercula, or as, respectively, frontal and parietal incisions of the Sylvian; bounding the rolandic operculum; and those which at least when occupying certain positions and presenting particular forms, have been weighted with the names, respectively, of "*untere Querfurche der Centralfurche*," and "*sulcus retro-centralis transversus*."

But this generalisation may be a little too bold. There are difficulties attending its simplicity. For the notches and furrows in question are very variable in size, direction, relations, and connections. And in many brains a considerable number of furrows groove or incise the Sylvian aspect of the frontal and parietal opercula, or a number of slight incisions notch their edge and become visible on the outer surface. In one case, such a notch may extend into one of the typical furrows under discussion and situate on the external opercular surface; in the next case, as viewed from the outside, there may be a similar notch at the same point of the opercular edge, and, quite separate from and independent of it, a similar furrow on the external aspect. Acceptance of this hypothesis also makes it necessary to postulate both the occasional reduplication of one or other of these two furrows; and the occasional absence of any representative of either of them, as well. And in some other cases the identification of

the representatives of one, or other, or both of them is not certain or satisfactory.

For example:—(1.) A transverse post-central sulcus may enter the Sylvian fissure, and sometimes the inferior post-central sulcus; and yet, in front of it, an incision also drive out of the Sylvian into the posterior central gyre (or limit it behind): therewith the transverse precentral sulcus may be rudimentary or be represented only by a spur-like furrow joining inferior precentral sulcus below; or on the other hand may be well-marked. And whether with or without the condition of transverse post-central sulcus just described, a like condition may affect the transverse precentral sulcus; so that an incision behind or below it out of the Sylvian may invade or limit the lower end of anterior central gyre.

(2.) The central fissure may end below in a terminal cross-piece directed obliquely upward and forward, and seemingly representing the transverse precentral furrow; and yet beneath and parallel with this may be another sulcus holding the position and relations of, and therefore constituting, a well-marked transverse precentral sulcus.

(3.) In one case there were:—(a) an obliquely upward and forward lower cross-piece of central fissure—(b) a well-marked typically placed transverse precentral sulcus—(c) a notching incision in front of this last—(d) a sulcus diagonalis:—and all these four out of the Sylvian, attaining the external cerebral surface, and somewhat parallel to one another.

(4.) The transverse precentral sulcus may be typical, joining the Sylvian; and yet therewith the inferior precentral sulcus may be continued below into the Sylvian—possibly by mediation of a representative of the diagonal sulcus.

(5.) Or, as in a case, the transverse precentral sulcus superficially joins the central fissure, and also enters the Sylvian; *besides* which the deviant downward and backward spur, continuing inferior precentral sulcus below, gives the impression of being a transverse precentral sulcus representative, confluent with inferior precentral sulcus.

(6.) Or the transverse precentral sulcus almost enters both inferior precentral sulcus and central fissure, or the transverse precentral sulcus enters inferior precentral sulcus; the transverse post-central sulcus superficially enters central fissure.

(7.) Or, by a compensatory adjustment, the transverse precentral sulcus is occasionally absent, while all the post-

central sulci are confluent, the line ending below with the deep entry of transverse post-central sulcus into Sylvian.

Concerning the deviation from usual form I have described, and consisting of a furrowing of lower part of surface of one, or other, or both, of the central gyres :—The nearly vertical fissurets may more or less divide the surface of anterior central gyres. But the latter are far less frequently incised from the Sylvian, in the particular way of which we are speaking, than are the posterior central gyres, and of these last the right is much more frequently thus affected than is the left. Thus there sometimes comes an appearance of furrows from the Sylvian fissure ploughed part (rarely two-fifths or more) of the way up the middle of the external surface of the central gyres or of one of them. In some examples at least, these mark an unusual extent and somewhat aberrant or less favourite position of the fissurets just described. I am less inclined to think they ever represent complete or partial duplication of a post-central or pre-central sulcus.

It is upon the intervention of the two transverse furrows under discussion that Eberstaller considers any communication of central fissure, or post-central sulcus, with the Sylvian, depends. Nevertheless, this intervention is not always necessary; for I have occasionally observed one or other or both of the two furrows now under consideration present and isolated from the relevant fissure or sulcus, which, nevertheless, communicated with the Sylvian: especially is this true of the inferior post-central sulcus and its transverse post-central annex or adjunct.

The above-described form, and unusual degree, of furrowing of lower portions of central gyres from the Sylvian denote a developmental aberration. They are occasionally seen also in microcephales.

The confluence of central fissure with the Sylvian, already referred to in this relation, is of value as marking a deviation from type; and Wilmarth reported such confluence on one side or on both sides in 23 *per cent.* of idiot brains.

In several cases Eberstaller found the upper half of both central convolutions and the roots of the two upper frontal gyres, of great size in farriers, and others, such as commæve day-labourers, who, all their lives, had done heavy ph-work calling into use a coarse motor activity. at "rela-

The posterior central gyrus may be cut across and divided into two or three parts, respectively, by one or two sulci; as, *e.g.*, by the entry into the central fissure of a post-central, or a sagittal inter-parietal sulcus, or a frontwise recurring spur of first temporal sulcus.

A reuniting spur of central fissure may insulate part of the cortex of anterior central gyrus. Or this gyrus may be much fused with the second and third frontal gyri, the pre-central sulci being very defective, and a vertically directed sulcus perhaps crossing the convolutions in front of and nearly parallel with the upper precentral sulcus.

Superior Post-Central Sulcus.

The *superior post-central sulcus* may appear to be duplicated, and the duplicate joined above and below so as to enclose an island of cortex; or a similar island may be formed by conjunction of superior post-central and "inter-parietal" sulci.

With forking and other anomalies of the upturn of sub-frontal fissure, the upper post-central sulcus and neighbouring furrows may be modified in form, position, and extent.

The Chief Precentral Sulci.

The *inferior precentral sulcus* often joins the second frontal sulcus (f_2); and may superficially join the central fissure. It may be comparatively far forward, and be joined, or nearly so, by the diagonal sulcus (d), from deeply out of the Sylvian. It may be irregular and radiate, long-armed and straggling. In some cases it is a single simple furrow and confluent with first frontal sulcus (f_1). Its horizontal ramus may be big and bold and almost join f_1 and d ; rarely, the ramus may come to look somewhat like a f_2 , unusually high up.

A strongly stamped *mesial* or *paramesial* precentral element, forming either a deep and bold fossette on the mantle border or a sulcus running out some distance on the upper aspect, may co-exist with defective or irregular forms of superior precentral sulcus.

Superior Precentral Sulcus.

The *superior precentral sulcus* may be strong and long, apparently absorbing some other elements below. On the contrary, it may be defectively marked, or isolate, or of

radial form, or of irregular shape. It may shallowly enter the central fissure below.

In some cases the place of junction of f_1 with a *sup. prec. s.* element has its upper bank formed by a superficial gyre which separates the point of junction from a furrow which lies higher up on the summit of the external hemispherical surface, and in line with the precentral sulci, or nearly so, and is continued well over the mantle edge and upon the mesial aspect; occasionally being continuous with the intra-oval-lobular incision; and therewith, and in front, may be a pit on the upper mantle border corresponding to a (sometimes so-called) "medial precentral" sulcus element.

This uppermost furrow might be mistaken for the superior precentral sulcus; the nearly vertical furrow below it, joined by the first frontal sulcus (f_1), and at its lower end distinct from the inferior precentral sulcus, might, perhaps, by some, be taken as an alleged "middle" precentral sulcus. But I take the latter to be the superior precentral sulcus, or a part of it; and the highest furrow of all seems to be part of a superior precentral sulcus united with a mesial precentral element.

On the other hand, occasionally the f_1 joins a *sup. prec. s.*, and immediately below the point of junction is a banking wall of cortex rising to the surface. On the other and lower side of this last, and capped by a horizontal curving furrow cross-piece, is a sulcus skirting along part of the front border of the anterior central gyre; and perhaps separated, by at least a deep gyrel, from the inferior precentral sulcus.

This intermediate furrow-element, again, may at first glance seem to be a middle precentral sulcus. But its relations are better taken as those of a lower element of the superior precentral sulcus.

And with regard to the alleged "middle" precentral sulcus; neither of the above relations and conditions of upper precentral furrow-elements would make valid the claim of a so-called middle precentral to be a distinct and independent sulcus. To this claim we shall return.

The Central Fissure.

Besides what has already been stated, it may be added that in brains of different grades some varieties exist as to the position of this fissure, be it somewhat more forward or backward than usual. As an unwonted condition, the fissure may be confluent with post-central, interparietal, first tem-

poral, first frontal, precentral, or Sylvian furrows. Rarely is it bridged by an annectant gyre. Once I found this in a low-grade imbecile. Sometimes the fissure fails to reach the mesial aspect of the hemisphere, either only just attaining the upper mantle border, or only to a point on the external surface some distance below that border. Coincidentally, there are often anomalies of the gyres and sulci on the mesial aspect at and about the region of the oval lobule.

Commentary.

It was stated by J. C. Mills that in poorly developed brains the central gyri are not sinuous or complicated or elaborated, and that the central fissure, in inferior types, is less sinuous and less likely to be fully separated from the great longitudinal fissure and from the Sylvian; confluence of it above and below, with these, probably indicating low type; a much elongated retro-central sulcus also probably indicating inferiority. And A. J. Parker stated that in negroes the central gyres and fissure are more simple, straighter, and less undulating than in whites.

Yet most of these conditions apparently are not often a true criterion of low type or of inferiority. Truly, they may consist with an inferiority of form. But in many cases the central fissure of low type is not unusually straight, devoid of zigzag undulation or sinuous curve. For many brains, decidedly inferior, have sinuous or zigzag central fissures; and this with irregularity and a considerable relative length of central fissure and gyres. And, so far from "indicating low type," the coming over of the central fissure slightly on the mesial surface is the typical condition, usually occurs during the last month of foetal life, and is normal in the adult. Its failure to occur, so far, denotes an inferior brain. Nor does an elongated post-central sulcus indicate inferiority with any certainty (see Chapter VI.).

A short straight smooth-walled central fissure, devoid of deep annectant gyrels, resembles that of lower apes.

The various unusual confluences of the central fissure with neighbouring sulci, already mentioned, are of value in indicating deviation from usual form; and are comparatively frequent in inferior brains.

Rarely, bridging of the central fissure occurs at about the middle or the junction of middle and upper third of the fissure. It is a departure in the direction of inferiority, and is equivalent to an unusual retention of foetal character, for

it represents the cortex separating the two early foetal pieces of the central fissure, of which the lower is the earlier in appearing and is the longer; and in normal foetal development the two pieces soon coalesce. The annectant gyrel, which thus rarely becomes truly bridging, in its ordinary deep position is stated to be not more marked in foetus and child than in adult, but to be more marked in Negroes than in Europeans, and to exist in chimpanzee and orang, but not in the lower apes (Cunningham). Its superficial position, when found in man, either indicates an atavism, as held by Krueg; or shows undue and abnormal retention of a foetal state. A little incision at the upper (or even lower) border of the deep gyrel may notch the anterior central gyre, but only in abnormal brains does it divide that gyre or enter the superior precentral sulcus.

Abnormal, also, is the significance of a truly bridging superficial gyrel at about the junction of middle and lower thirds of the fissure, in an insane murderer's brain. This possibly represented a surface position of the deep gyrel next to be mentioned, and seeming to be placed higher up than usual, in consequence of the defective development of the central fissure in a brain of low type. For a deep gyrel, close to its lower end, may in some cases mark the junction of the central fissure with the transverse precentral sulcus.

Absence of forward projection of the posterior lip of the central fissure in its lower half tells in the direction of simplicity and inferiority of brain-development.

Forkings and unusual spurs of the central fissure, and islets of cortex in its course, signify irregularity or deviation of formative activity.

A central fissure in Man, shallow relatively to the interparietal sulcus, betrays a tendency to simian character.

Curious disturbances of the relative position of the central and "calloso-marginal" fissures may occur in cases with grossly defective and irregular form.

An unusually perpendicular position of the central fissure in adult human brains, if it be not accountable for by brachycephaly, may sometimes be an unusual preservation of its earlier foetal position (5th, 6th, and 7th months).

The length of this fissure, as compared with the total length of the hemisphere measured along the superior border between certain points, has been called its "relative length."

The bearing of a central fissure of unusually great "rela-

tive length" must be estimated by the set of accompanying conditions forming the morphological context. Cunningham found this "relative length" of the central fissure to be greater in persons with larger cephalic index (brachycephales), greater also in adults than in foetus and child, and greater in chimpanzee, orang and hamadryas than in man.

The central fissure is not special to primates, it exists also in other mammals, but in these latter is oblique in an inverse direction from its obliquity in primates, and is situated much more forward near the point of the hemisphere in consequence of the smallness of the frontal lobe. "It is by the excessive volume of the frontal lobe that the brain of primates distinguishes itself from that of other mammals" (Broca).

In the lower apes the central fissure is devoid of flexuositities; but in that respect the fissure in the orang and chimpanzee has much the human form.

Attempts have been made to establish *human sexual differences* with regard to the *dimensions of the frontal lobe* as measured up to the *central fissure*. Thus Huschke and Passet attributed a greater average frontal measurement to the male than to the female; *i.e.*, a greater average *absolute* antero-posterior length of frontal brain; (the former also stating the length from central fissure's upper end to hemisphere's hinder end to be, on the contrary, greater in female, the latter stating it to be alike in female and male). The true problem is to find whether the *relative* length and measurements differ in the sexes. Eberstaller concluded that they did not; practically no difference existing between them, the *relative* length of the frontal border, to the whole hemispherical upper border, being much the same in male and female.

On the *absolute length of the central fissure itself*, sexual differences were assigned. The length of a straight line joining the fissure's two ends; and, even more, the length of the fissure as measured by following its meanderings; were found by Passet to be greater on the average in males than in females. But without a "control" statement of the brain-dimensions in the cases comprising the two sexual groups compared, these results are defective, inasmuch as the average male brain is larger than the female: and, *other things equal*, greater absolute length of a furrow in the

former might have been expected. The *relative* length is required; and the *relative* length of the fissure, to total length of upper hemispherical border, was observed by Cunningham to be slightly greater in female than in male.

Also upon the *direction or inclination of the central fissure* establishment of sexual differences has been attempted, Passet and Rüdinger assigning a more vertical or transverse position (and therefore a larger average anterior angle with the mesial plane—"rolandic angle") in females than in males. But Eberstaller's researches are against the existence of any noteworthy sexual differences in this respect.

FALSE APPEARANCE AS OF TWO OR THREE CENTRAL FISSURES.

There may be specious appearance of two or of three central fissures, owing to extremely bold definition and unusually great development of the post-central sulcus group, or of the precentral sulcus group, or of both. When the post-central sulcus group is thus concerned, a shutting off of the horizontal interparietal sulcus (in the restricted sense) from the post-central adds to the simulation. This arrangement has been mentioned under the Parietal Lobe, in the last Chapter. The so-called double fissure of Rolando described by Giacomini seems to be merely one of Sernow's "post-rolandic" sulcus types; namely, the first type, that in which is an independent, separate, uninterrupted post-central sulcus, of which the upper end attains the hemispherical border or not, and the lower end mostly joins the Sylvian fissure. Yet it is stated by Mills* that Wilder showed a brain with two, apparently real, central fissures on each side.

It is convenient to complete this matter by anticipating, and adding here, on the precentral sulcus group and in this particular relation only, what would otherwise more strictly fall under the head of Frontal Lobe.

A precentral sulcus group or system with its several elements sui-confluent, boldly defined, bordering the anterior central gyre all along its anterior coast, and perhaps entering a little on the mesial aspect and into the Sylvian, may wear the aspect of a duplication of the central fissure; and the simulation would be very nearly exact if, in such case,

* *Text Book on Nervous Diseases*. Edited by Dercum, p. 390.

the system of precentral sulci had undergone reduplication in parts.

This continuous or nearly continuous precentral furrow is formed by the direct, or by the intermediated, union of the superior with the inferior precentral sulcus, the position of the latter's upper part then being that it is closely hugging the anterior central gyre. Conjunction of superior and inferior precentral sulci was reported by Sernow in one-eighth of the hemispheres he studied. He mentioned a third furrow between them in other cases, constituting 15 per cent. of the whole, and as forming a transition between the type in which the two, named, sulci are isolated from each other and that in which they unite.* No doubt this third furrow was what has since been termed by some a middle precentral sulcus. Cunningham, who found this condition in one-eleventh of adult hemispheres, claims that the union is not direct between the superior and inferior precentral sulci, but is effected by the mediation of a middle precentral sulcus, this last being either the terminal cross-piece (horizontal ramus) of the inferior precentral sulcus, and having undergone vertical rotation; or being, on the other hand, in some cases, a distinct new element linking the superior and inferior precentral sulci, and connected either incompletely or fully with the lower end of the superior precentral, but placed somewhat behind the upper part of inferior precentral sulcus. Yet, if we adopt this explanation in general, we cannot call the link by the same, and a special, name (sulcus præcentralis medius) under these two entirely different conditions; indeed, in the former of the two the furrow is merely a well-known element of the inferior precentral, but now out of its usual position and uniting *directly* with the superior precentral. The superior and inferior precentral sulci seem to unite directly in some cases; and the status of the middle precentral as a definite, well-marked, independent sulcus appears to be doubtful. This has been referred to above. Moreover, a little irregular furrow sometimes found at, and by, the mantle-edge, above and separate from the main line of the superior precentral sulcus, I have always taken to be in reality a sometimes united, sometimes separate, part of that sulcus, lengthening the latter upward when they join;

* Abstract by L. Stieda, *Archiv für Anthropologie*, Band xi.

and not to be considered and named separately, as has been done, unnecessarily.

However formed, the more or less continuous precentral sulci simulate the formation of a second central fissure. The significance of the condition is not very easy to appraise; different points tell for and against it as an indication of either advance or falling back. Yet it does not usually denote a brain of high grade. This condition of a long, bold, precentral sulcus representing, practically, the constituents of the whole precentral sulcus group—which usually are more or less separate—is found in many brains of low or aberrant type, and even in microcephales, sometimes; and in any individual case, due weight being assigned to this fact, an appeal to the “context” will be our guide, should there not be tokens of inferiority clearly manifest. In the foetus of the fifth and sixth month the inferior precentral sulcus is sometimes long and bold, as if in promise of *its* share in such an arrangement.

INSULA.

For reasons deemed sufficient, the Insula is taken here under the head of the Central region. Defective in form, are healthy human adult brains in the prime of life, with the island of Reil partly uncovered, thus showing impaired opercular development, to some extent representing conditions found temporarily in the human foetus and tending to disappear in subsequent life; and found as a permanent state in ape-brain. This partial uncovering of the Insula is observed in some brains of low type; as, for example, in some idiots, imbeciles and criminals; and, according to some observers, in lower races of mankind. Its occurrence as a result of local secondary atrophy, or of senile atrophic decay, is not within the scope of our subject.

When the uncovering, dealt with here, exists, it is the anterior portion of the Insula which is most liable to be unroofed. This exposure, especially if with undue obliquity of the orbital surface of the frontal lobe and much arrest of opercular formation in that lobe, assisted by other concurrent alterations, may render visible the anterior marginal sulcus of the Insula, trending boldly upward and forward (or backward) on the lower external frontal aspect. In ordinary brains this sulcus is continuous with the anterior horizontal limb of the Sylvian fissure; but with opercular

deficiency that limb lessens; with opercular absence it tends to disappear. But does it leave absolutely no representative? Is the "fronto-orbital sulcus" in the anthropoid brain "the representative of the anterior limiting sulcus of the insula in the human brain," and of that only, as believed by Cunningham?

Or, putting it another way; is that part of the marginal sulcus of the Insula in Man the full homologue of the whole of the "sulcus fronto-orbitalis" of the anthropoid; a sulcus, too, which seems to be almost completely reproduced in many microcephalic brains? Have the microcephalic and the anthropoid sulci any representation (of their upper portion) in an anterior Sylvian limb of the normal adult human brain, but now disturbed in relations by the enormous changes attending opercular growth? Seemingly, they have.

Signifying inferiority, also, are *relative* marked smallness of Insula, defective conformation of its gyres and furrows; replacement of its usual folded state by a smooth layer of grey matter, or by flattened and unusually radiating volutions.

CHAPTER VIII.

FRONTAL LOBE (other than anterior central gyre and precentral sulci: see Chap. VII.)

First and Second Frontal Gyri (F¹ and F²).

The first and second frontal gyres may be completely separated from each other, behind, by a bold sulcus. Or no clear distinction between them may exist; and this more often on the right side. In such a case, sectional representatives of the first frontal sulcus (f_1) may partly divide the *first frontal gyre* diagonally upward forward and inward, and to or towards the mantle edge. Or the first frontal gyre may be much ploughed up by short furrows; or its posterior part may be longitudinally divided by a sulcus, and a short vertical furrow in front of the superior precentral may intersect the first frontal sulcus transversely on the upper surface, thus cutting off the back part of the gyre. And this may be done by a far extension of the trunk, or a branch, of the inferior precentral sulcus; or by a sulcus coming up, out of the interhemispherical chasm, from the mesial surface, and representing an adjunct, or even part, of the subfrontal fissure system (*c.m.f.*).

This first frontal gyre (F^1) may be narrow and smooth in brains of defective development.

Similarly of the second frontal gyre (F^2); it may be much divided by fissures directed upward forward and inward; and its posterior part may be shallowly cut off by furrows, or the gyre may appear to run obliquely forward upward and inward; the tip of the frontal lobe being formed, as usual, by a congeries of small volutions; therewith, the third frontal gyre being relatively small.

Third Frontal Gyrus (F^3); (and its insertion into anterior central gyrus).

The right is the one more often unusual in form.

Ill-developed, thin and narrow, in whole or in part, the third frontal gyre may be. Occasionally, it is very irregular. The distinction between it and the second frontal gyre may be obscured, or, on the contrary, highly marked. But its conformation is often much altered by invasion of sulci, by being grooved, channeled, sunken in places, and thus irregularly divided into small gyres, by one or more sulci; as, *e.g.*, an extension of the lower precentral sulcus, or of the ascending limb of the Sylvian fissure, or the continuation of these by an independent communicating sulcus which may traverse both third and second frontal gyres. Or, between the lower precentral sulcus and anterior ascending limb of Sylvian, a sulcus may channel the third frontal gyrus crosswise to its longitudinal axis. To this I will return in a moment. Indeed, there may be two (or more) such furrows between the lower precentral sulcus and the ascending limb of the Sylvian.

In some examples the third frontal gyre may be wide, partly furrowed, also, antero-posteriorly into two tiers; and the ascending Sylvian limb may be shorter, and placed further forward, than ordinarily.

An unusual furrow may run straight, or crookedly, along the lower external frontal aspect, near the orbital surface.

Marked deviations from the usual outline-shape, and from the usual comparative relations of size between the several gyres, are sometimes found in the frontal lobe. These it would be tedious to state in detail.

A changed apparent direction of frontal gyres; and an increased number of frontal tiers need mention only, here; they will be discussed separately, later on.

COMMENTARY.

The Diagonal Sulcus.

Just above, I mentioned a furrow often channeling across the third frontal gyre somewhat vertically between the inferior precentral sulcus and the ascending limb of the Sylvian fissure. It may run in parallelism with the stem of the inferior precentral sulcus, it may lie close to the ascending limb of the Sylvian, or may enter this or the main horizontal portion of the external Sylvian. It may even run straight or zigzag, in outward appearance, nearly to, or to, or beyond, the first frontal sulcus, though perhaps interrupted by a slender bridging gyrel. It is apt to enter neighbouring sulci, as *e.g.*, the inferior frontal. It may even look like a spur from this. If it cuts into the inferior precentral sulcus above, the lower part of the latter seems to be diverted off or bent, and the sulcus we are describing looks like a forward and downward branch of the inferior precentral sulcus. If, below, it cuts into the Sylvian or its ascending ramus it looks, superficially, like a second ascending ramus of the Sylvian fissure. Or the representatives of the diagonal; of the single anterior Sylvian limb on external surface; of the f_2 ; and of the inferior precentral sulcus may all run together. It may be situate further forward than usual.

Lying between the inferior precentral sulcus and vertical limb of the Sylvian, and often dividing the "opercular" portion of the third frontal gyre (F^3) into a "basilar" and an ascending part, it is said to always run upward and backward. But occasionally I have observed it run vertically upward or upward and slightly forward. I have sometimes found two or even three transverse furrows between the inferior precentral s. and anterior ascending limb of Sylvian. And especially when it was elongated, I used to suppose that in some cases a furrow in this situation might be a reduplication of, or of part of, the inferior precentral sulcus. For occasionally a sulcus starting below from the situation described may rise high on the brain-side and even to the mantle border, or nearly so. In this course it may be bridged by a slender gyrel. Although a deviation from type, this unusual extension upwards may be found with high mental powers.

The sulcus under discussion, I observed and studied a

number of years ago; and on one occasion searched for it in all the plates of foetal brains of which I could avail myself at the time, and found in a few what I took to be the foetal representative of it. It has, however, been fully described by Eberstaller and he names it "*sulcus diagonalis*." His researches throw light especially on the changes in appearance and relations wrought by its union with other furrows.

Comparisons between the several Lobes of the Brain.

The researches of Cunningham showed that in the human foetus between the end of the sixth month and birth at full term *the relative index of the Occipital lobe* (the mesial length of the hemisphere along the upper border being taken as 100) increases gradually, and only moderately, from 18·8 to 20·8;—that of the *Parietal lobe* lessens considerably at first, but subsequently regains part of the loss;—that of the *Frontal lobe* at first increases somewhat, and, later on, lessens again a little.

Also that, compared with the ape's, merely as to measurement on upper edge of hemisphere, the parietal human brain is of *greater relative length* than that of any ape; the occipital human brain is of *less relative length* than that of any ape, and especially than of low apes; the human *frontal mesial relative length* is less than in chimpanzee and orang, greater than in other apes; the human *frontal lateral relative length* is greater than in any ape except *cebus*. And in the high ape the diminution of parietal mesial relative length is partly effected by increase of occipital, but chiefly of frontal mesial length: in the low ape it is entirely effected by increased occipital length.

Taking the chief forms of mental disease, Crochley Clapham found the *average* percentage of *weight* of frontal lobes to that of encephalon to be relatively high in Idiocy and Imbecility, being exceeded only by that found in "*Mania*," and equalled only by that found in "*chronic mania*."

With regard to the development of the frontal lobes *relatively* to other lobes, their defect in brains of low type is not obvious from *relative* measurements; and this is a matter in which weighings or a whole set of measurements ascertaining the bulk of the several lobes in c.c.'s are necessary, the mere measurement of frontal indices, whether on the upper border or on lower external surface, failing to yield.

sufficient for accurate comparison, even as to size only. In lower-type brains the frontal lobes do not hold the position of size relatively to other lobes that the *length* of their upper border would speciously indicate; in many such cases that length may be, *relatively*, good; even above normal *relative* length; but the lobe's size is not *absolutely* good or excessive, nor its development even *relatively* so. The specious appearance of being good or above normal in size is partly, or sometimes, due to the arrested development of other parts of the hemisphere, and partly to the fact that the frontal lobes, although perhaps of good *relative length*, are often narrow, or pointed, or shallow from above downwards, and, as regards the last, especially does the opercular frontal formation fail. It is in respect of this opercular formation, perhaps more than of anything else in its larger morphology, that the frontal lobe of the fœtus and of the new-born is surpassed by that of the human adult, the frontal lobe of the ape by that of man. And in the senile decline of life, when the most recently acquired parts and functions fall first into decay, when age and wear-out affect the parts whose functional and structural integrity are needful for the manifestation of the higher mental activities, the opercula of the frontal lobe show the change decisively. Hence, and especially when the meninges are stripped off, there may be seen a partial uncovering of the Insula; a subject another aspect of which has received attention in the preceding chapter. In microcephales, also, the frontal lobe, although it may be of long or over-long *upper frontal relative index*, is defective in its lower and opercular portion; and presents that gradual slope of orbital over on to external lateral frontal surface, and that partial exposure of the Insula, which reproduce the simulacre of the simian form in this region and of the latter's differences here from the normal human frontal brain.

Convolutional Elaboration of Frontal Lobes.

Greater or less gyral richness of frontal lobes has been taken by some, as Wagner, to indicate the most striking difference between brains externally; and in the frontals of richly convoluted brains attention has been drawn to the numerous divisions by short secondary sulci, and the bridging of frontal furrows by small secondary gyres.

General conformation, position and size of frontal gyres and sulci.

In some defective brains the frontal gyres and sulci, or several of them, are very irregular and irregularly placed.

Comparatively simple frontal lobes, or boldly defined, have been found in delusional lunatics, idiots, negroes; and in imbeciles numerous and unusually small gyri in flattened frontal lobes. In some microcephales the whole frontal lobes are small.

Third frontal gyre (F³).

The third frontal gyres are small and ill-developed on one side or on both in many microcephalous idiots, and in some deaf-mutes.

Rüdinger's conclusions that the third frontal gyres differ in the sexes; and in the two cerebral hemispheres; and in accordance with intellectual, and especially oratorical, capacity, have been met with objections drawn from their well developed state in some low-class people, and in some deaf-mutes and cretins. Yet his conclusions derive conspicuous support from some examples, as, for instance, the brain of Gambetta.

Connected with the F³ are other points of interest, e.g.:—

On the external cerebral surface there may be only a single *anterior* Sylvian ramus, which in such case represents both the usual vertical and horizontal anterior rami; and, as a rule, holds an oblique position intermediate to the vertical of the former and to the horizontal of the latter.

Nevertheless, there are several conditions which must greatly modify our view on this part of the morphology in many brains.

(a.) For one thing, it may be observed that what is essentially the triangular portion or "cap" of the third frontal gyre (F³) is in some cases not wholly situate on the *external* cerebral aspect, but partly lies on the orbital surface; what represents the anterior horizontal limb of the Sylvian being on the orbital surface, with the regular general relations of that limb; and what represents the true anterior vertical ramus being that which at first sight would be taken as a single oblique ramus, and as representing the usual two anterior Sylvian rami on the external cerebral aspect. Thus

we may take the cap as turning well over on to the orbital surface, in some cases.

(b.) Another conformation, which complicates the problem in not a few brains, is that which for convenience I have been accustomed to call a "double cap." For there appear to be two very similar caps side by side, and chiefly on the external cerebral aspect, but partly on the orbital. The doubling, or the simulation of it, is sometimes very complete; in other cases the bounding clefts do not all of them fully conform to the strict, and perhaps too rigid, requirements demanded by some as necessary to justify the appellation of true Sylvian ramus for a furrow ploughed out from the Sylvian fissure or fossa.

(c.) And the last that I will mention here is the condition in which a cleft, usually part of a *diagonal sulcus*, becomes deeply confluent with the Sylvian, and in such relation to the one single and certain anterior Sylvian ramus on the external surface, as that it simulates a Sylvian *anterior vertical ramus*. But, in at least some such cases, the true cap, or representative of the cap, lies partly on the orbital aspect, and is situate between the single true external anterior ramus on the one hand, and on the other hand a Sylvian ramus orbitally situate; and the cleft in question is not, in strict sense, a true Sylvian ramus.

Smallness of the opercular frontal region, including a dwarfish or rudimentary state of the cap, is a mark of inferiority.

Gyral relations of first and second frontal sulci (f_1 and f_2).

Comparing f_1 and f_2 :—Formerly, it was stated that in complicated brains the first frontal furrow is more than usually complicate; that in simple brains that furrow is the more simple of the two; the second frontal furrow being, of the two, the more complicate one in simple brains, the more simple in complicate brains. According to this, the elaborateness of the gyres at the upper part of the frontal convexity would especially characterise the brains of higher type; therewith, the lower part of the tiers being characterised by simplicity; and the reverse state of affairs obtaining for low-class brains. But this does not appear to be valid; and the third frontal gyre probably is at least as important as the first (or more so) in the characterisation

of brains of high type. Indeed, the comparison of the normal adult human cerebrum of high type with (a) the foetal human brain, and with (b) the brain either of anthropoid, or of low apes, seems to indicate that, among many of importance, the most important factor of the difference between the human and ape frontals is the great downward growth of the lobe, especially in front, and complete opercular formation; a condition which involves a better formation of the third frontal gyre.

Contrarily to Pansch, Jensen and Wernicke—Sernow stated the first frontal sulcus to be more constant than the second, finding the former in 99 per cent., the latter in 84 per cent. only. As he stated that in 48 per cent. the first frontal sulcus ran over the whole upper frontal lobe, he probably often took the second frontal intra-gyral sulcus for part of the f_1 . The f_2 he described as running over the whole length of the frontal surface in one-third of the hemispheres in which it existed!

First Frontal Sulcus (f_1).

This is well impressed on some brains more or less of inferior type. In certain examples it is represented by from two to five obliquely-set forward and inward pieces, roughly parallel, and trending towards the mantle-edge. One of these may join the sup.-prec. sulcus, and thus assist in the formation of a long, arched, quadriradiate furrow. The f_1 may apparently join the second frontal intra-gyral sulcus (F^2 i.g.s.) over a gyrel. But when these sulci are broken up into scattered disjunct pieces, it is difficult in many cases to distinguish whether certain elements belong to the f_1 or to the (F^2 i.g.s.).

The same difficulty sometimes attends the allocation of a particular element to the f_1 or to the F^1 i.g.s.

With regard to the perplexing doubt now and then found in distinguishing elements of f_1 and F^2 i.g.s.; to one free from preconception, the more natural interpretation of the appearance in some brains would be that the f_1 is bridged once or twice, sends a lateral spur or two towards the mantle edge, but is really continued in a bold zigzag sulcus on the upper surface, some distance external to that edge, and towards, or to, the anterior fronto-orbital margin, or even, rarely, driving boldly over it and upon the orbital aspect.

The f_1 varies considerably in the comparative height at which it lies on the cerebral convexity. It may be isolate from other sulci.

Sometimes it is indefinite, or very irregular, or radiate; occasionally it is more or less confluent with the central fissure.

In a chronic epileptic, I found the f_1 strongly stamped, but irregular and zigzag; the fronto-marginal sulcus being, likewise, marked; but the f_2 and F^2 *i.g.s.* both ill-marked.

Remarks.

Indicating inferiority, is a f_1 divided into several oblique overlapping pieces; a condition which may also appear in the foetal brain in the seventh month. Interrupted by gyral folds bridging from bank to bank across the furrow, the f_1 of the adult human brain may thus be represented by a series of overlapping obliquely-set fissurets, directed forward and inward; and thus has a disposition which resembles the usual temporary one in the human foetus, and is fixed in permanency in the brain of some apes, as the baboon. Or the separate sulcus-elements may be set nearly in a straight line, one after the other, and may be shallow. These discontinuous states of the sulcus are less apt to occur in the white than in the negro. In fact, more or less decided continuity of these sulcus-elements distinguishes the white's brain rather than the negro's; the adult brain rather than the foetal; the human brain rather than the simian; and the sulcus only first appears in the animal scale with the higher apes. In Man, its unusual slightness, or shallowness, or degree of interruption, betokens inferiority; other things being equal.

Second Frontal Sulcus (f_2).

In my necropsies, somewhat frequent descriptive terms applied to this sulcus are "ill-marked;" "small;" "short;" "quite rudimentary;" "scarcely distinguishable;" "fragmented and doubtful." It is sometimes represented by irregular, obliquely-set, somewhat parallel and overlapping pieces. When *ill-marked*, it may also be separate from an apparent representative of the incision of the cap, or this last may have a fish-hook-like curve; or a

spur may join the seeming f_2 with that which apparently represents the F^2 *i.g.s.*; or with it may be associated (a), an ill-formed and displaced inferior precentral sulcus; but, on the contrary, (b), its defective state may seem to be compensated for by a highly marked inferior precentral sulcus.

It may lie comparatively high up or low down on the frontal convexity.

It may be *vis-a-vis* of the angle of fronto-marginal sulcus, which is then quite distinct from the F^2 *i.g.s.*

Similar varieties of condition of *s. radiatus* and other elements adjunct to the f_2 also obtain; and the same is true of the fronto-marginal sulcus.

The *incision of the cap* is sometimes prolonged far up and to—or separated by a gyrel from—an element of the F_2 *i.g.s.*, or of the f_1 . By chance, perhaps, I have met with this in a number of Irish brains. The incision may make an upward, then forward, then downward, then backward fish-hook-like curve. It may be connected with irregular “radiate” and fronto-marginal elements. It may lie in front of a single obliquely-set anterior Sylvian ramus.

Remarks.

A short straight second-frontal sulcus, devoid of annectant gyrels, betokens resemblance to simian form. If the “context” is one of inferiority, a bridged irregular-curve-set, or sectional, f_2 may point to undue persistence of a foetal condition, is found in some microcephales with a well-marked lower precentral sulcus, and shows absence of high evolutionary grade. The anterior terminal cross-piece of the f_2 develops comparatively late, and it and its adjuncts are recent phylogenetic acquirements; and, other things equal, mark brain-superiority.

Union of Second frontal and Inferior precentral furrows.

Cet. par., union of f_2 and inferior precentral sulcus marks a somewhat higher brain-form than their discontinuity does. For their union, whether incomplete or complete, occurring in about two-thirds of adult hemispheres, is found more frequently in the adult brain than in the foetal, and in the white’s brain than in that of the negro. Cunningham

found that the union is either, and usually, to the vertical stem, or sometimes to the anterior branch of the horizontal piece, of the inferior precentral sulcus.

Inferior precentral furrows.

And he indicated that the *horizontal ramus of the inferior precentral sulcus*, as a rule, is relatively more evident and more sagittal in the foetus than in the adult. Therefore, when found in the adult, these conditions of the ramus may indicate a developmental failure consisting in an unusual persistence of foetal characters. A somewhat sickle-shaped *inferior precentral sulcus* seems like a lower simian morphological reminiscence; or like a retention of a foetal character occasionally observed (seventh month). The relative distance it holds from inferior and superior borders of the frontal lobe differs much in different brains; but the intervention of other sulcus-elements complicates this subject and obscures its interpretation. The diagonal and inferior precentral, blending, may assume somewhat the position and relation of an ape's *sulcus arcuatus*.

Marked confluence of *inferior precentral sulcus* with Sylvian; usually by transverse precentral or by diagonal furrow; is apt to be accompanied with absence of high developmental grade, and exists in some microcephales. And much the same is true of its free confluence with the central fissure.

Superior precentral Sulcus.

This is absent in lower apes; its first appearance is comparatively high in the animal scale, and somewhat late in human foetal development. Its defective formation is frequent in brains of a low order. Its shortness, or shallowness, or absence indicates developmental failure, or else reversion in type.

But if the only clearly cut precentral sulcus runs upward and slightly forward, and the first and second frontal sulci terminate in it behind at about a right angle, the condition corresponds to that observed in some foetal brains (seventh month), and may mean inferiority.

The first and second frontal sulci, the three precentrals, and the diagonal sulcus may all be confluent, so as to form a continuous branched sulcus in appearance.

Fronto-Orbital Sulcus.

In Man, a well defined representative of the fronto-orbital sulcus of the anthropoid apes tells, as far as it goes, of reverting tendencies towards simian type. In some microcephales, its resemblance to the condition normal to certain apes is very close; and therewith the "anterior branch of the Sylvian fossa" is often absent (Giacomini).

An ascending limb of the Sylvian may appear to plough up the third and sometimes even second frontal gyre, making apparent entry into second frontal or other furrow. But as a rule the connection is only apparent, and probably effected by the intervention of the diagonal sulcus, or of it joined by inf. prec. s. In microcephaly there may appear to be an ascending and a horizontal anterior limb of the Sylvian, far extended like the prongs of a pitchfork.

*First and Second frontal intragyral furrows. (F^1 i.g.s. and F^2 i.g.s.)**

The F^1 i.g.s. varies much in different brains as to the degree and clearness with which it is stamped on the brain. It is ill-marked in many of the brains of very defective morphology, but may be distinctly impressed in those mentally deranged persons who possess brains of comparatively high evolution. In the brains of the insane, here, I have found the F^2 i.g.s. considerably more often clearly and boldly indenting than the F^1 i.g.s. But sometimes it (F^2 i.g.s.) is only represented by fragments, or very irregular elements, or is indefinite or irregular. As already stated, it is sometimes nearly connected, or even more or less confluent, with the f_1 .

Remarks.

The second frontal intragyral furrow is a subject of contention, and according to one view possesses early phylogenetic evolution; but by the opposing opinion only makes

* I use the names first, and second, frontal intragyral furrows, the former as being better than the inaccurate term "sulcus frontalis mesialis;" and the latter not only as shorter than the appellation "the sulcus of the second frontal convolution;" but also preferable to the name "sulcus frontalis medius" because avoiding possible confusion owing to the application of this last term, long ago, by Fanech, to the second or inferior frontal sulcus. Medio-frontal sulcus is a name fairly free from objection.

first appearance in higher anthropoid apes. As regards its human foetal development, Cunningham observes that, as a rule, it only first appears about the middle of the seventh month of intra-uterine life, and is the last but one of the several sets of frontal sulci to form.

The very last of the series of frontal furrows to become visible is the set tending more or less to divide the first frontal gyre sagittally on the posterior two-thirds of its upper convexity. This may be termed first frontal intra-gyral furrow (" ϕ fissure" of Benedikt).

It first comes near the very end of foetal life; or, more often during the first month of infancy. Phylogenetically, it is recent. It first appears in man, the summit of the evolutionary scale. Even in the negro it is only defectively marked.

Other things equal, a well-marked degree of the normal condition of these furrows denotes superiority; their absence, or slightness or irregularity of form denotes inferiority, in our patients' brains.

The developmental, and the inferred phylogenetic, history of these two furrow-sets are made even more particularly interesting in virtue of their bearing on the significance of a well-defined arrangement of the frontal convolutions in four or five tiers (instead of three) on the supero-external frontal aspect. Therefore, at this point, the subject of

AN INCREASED NUMBER OF FRONTAL CONVOLUTIONARY TIERS, may be conveniently and briefly considered.

The upper and lateral frontal convexity may be more or less divided into four tiers of convolutions. Differently from Benedikt, I have found the arrangement in four tiers more often due to division of the second than of the first frontal gyre; an unusually great development of the second frontal intra-gyral furrow being the chief factor in production of the appearance of partition of the gyre. And I have observed examples of more or less marked division of this frontal surface into five tiers of convolutions.

As already said, the division is most frequently of the *second frontal gyre*. In its front half, and occasionally extending far back, the convolution's own intra-gyral—or medio-frontal—sulcus effects the partition. While, behind, and possessing a good depth, the anterior upper, or horizontal, ramus of the inferior precentral sulcus—

especially in cases where the lower root of the second frontal gyre is marked—may intercalate itself between the two roots of the gyre, the lower root perhaps seeming to coast along before entering the gyral mass, owing to the union of the two roots being superficially hindered by that ramus of the inferior precentral, which, moreover, may be so directed anteriorly as to join, or nearly so, with the medio-frontal, and by its backward continuing branch may abut upon, or even enter, a superior precentral element, thus, in one way or the other, dividing much of the second frontal convolution lengthwise. Other furrow-elements—sometimes adjunct to the back end of the ordinary medio-frontal sulcus—departing somewhat from usual disposition, may now and then assist in this partition of the *middle* frontal convolution.

The upper aspect of the *first frontal gyre* may be partly divided by an unusual length, depth and definition of its intra-gyral furrow system; or by great length of its external (lateral) root, running far forward and lengthwise, before it fuses with the gyre, and correspondingly dividing the first frontal sulcus.

Thus, the exaggerated formation of each of the mentioned intra-gyral furrows, with the separation of roots, and the aid of adjunct furrow-elements (this last especially in second frontal gyre) may lead to division of either the second or first frontal gyre or of both, in part or in whole, and sagittally, into two superimposed gyres.

The partial furrowing of third frontal gyre into two tiers, already mentioned in a previous section, is in my experience infrequent, and is inconsiderable, as a rule.

Found in some brains of criminals, lunatics, and mentally defective persons, this four (and five) tier type has been believed by some to indicate grave reversion or aberrancy. Thus Benedikt, taking this four-convolution type in frontal lobe of Man to be atypical, adds that the only true frontal type of four gyres is when the sulcus on the first frontal gyrus is formed corresponding to an "ideal-furrow," of which the most constant representative is Leuret's first fissure, of certain animals, in the parietal lobe. The type of four convolutions is found in the ox and walrus. Formerly, at least, he also held that the four-tier form when existent in Man arises from reversion of the representatives of the two upper gyres in carnivora, which had

become, in Man, fused into one convolution—namely, the first frontal gyre.

Against this view, I believe the frontal type of four and five gyral tiers—when and so far as due to an unusually marked division of the upper surface of the first frontal convolution by a sagittal first frontal intra-gyral sulcus—marks a higher than usual, and not a lower, condition of brain-formation. And perhaps, but less convincingly, the same is true of the four-tier form produced by division of the second frontal gyre in consequence of a great development of the second frontal intra-gyral sulcus, with or without the co-operation of other factors. Instead of degradation and reversion, the four-tier form, at least in many cases, must indicate, rather, a high position in brain evolution. This, indeed, is compatible with mental aberrancy, with unstable and labile mental activities, lively and powerful but not well-directed—in a word a brain function lacking in balance.

There is a contested point which bears definitely on this question. In a preceding section, I have referred to the many conflicting views as to the homologies of frontal elements of ape and human brain; and to two of the more recent of those with regard to the sulcus rectus of the former brain; one, that it is the homologue of the inferior frontal sulcus of Man; the other, that its homology is with the “sulcus frontalis medius” of Man (second frontal intra-gyral of the preceding pages). Of the former theory, Cunningham is a recent champion, and Eberstaller of the latter. Now the sulcus rectus of the ape, possessing, phylogenetically, the fixed state and ancientry of long establishment; if it be homologous with the inferior frontal sulcus of Man, the type of four tiers of frontal gyres in him, formed in the manner a moment ago mentioned, would be compatible with relative superiority.

But if the sulcus rectus of the ape be homologous with the second frontal intra-gyral furrow of Man, that four-tier-type, in some examples, would be evidence for inferiority. This is true for each view, as far as it goes, other things equal, and necessary omissions and exceptions made.

If, on the one hand, we take a few scattered pieces in certain ape-brains to be homologous with the second frontal intra-gyral sulcus of Man, we would assign to its well-marked condition in him a good or superior position. On

the contrary, if we adopt the homology between that sulcus in Man and the sulcus rectus of apes, an unusually boldly defined example of the former would merely indicate retention of the early phylogenetic lines; and, to say the least of it, not tell for superiority. Practically, in the former case the superiority; in the latter, the inferiority; of the frontal four-tier type, would be indicated. Of the two, I take the former view.

DIRECTION OF FRONTAL FURROWS AND GYRES; REAL OR SPECIOUS.

The first, second and third frontal gyres have sometimes an appearance of being unusually twisted or deflected in their forward course, so as to appear, more than usually, as if trending forward, upward, and inward, in a diagonal direction, as if the first sought the mesial surface, the other two the frontal tip; a deviant line of direction and oblique thrust of the frontal gyres. Therewith, as a rule, the frontal convolutions are more than usually traversed by fissurets directed forward, upward and inward; a condition mentioned above; and one which in large degree creates the semblance described. It is an extreme degree of the normal appearance and condition; which, indeed, differ considerably from schematic representations. Therewith, also, the first frontal gyre, as a rule, is very defectively marked anteriorly by first frontal intra-gyral furrow-elements.

As to this description of an unusual degree of upward and forward direction of frontal fissurets:—In the foetus and child this direction is often taken to a considerable degree by the overlapping series of furrows representing the first frontal sulcus, and less so by those representing the second frontal sulcus, or those representing the second frontal intra-gyral furrow. Likewise, the same direction is often taken by the foetal divaricating upper end of inferior precentral sulcus or its representative, or by the representatives of the superior precentral sulcus. These may represent, in an ephemeral foetal phase, what is permanent in animals nearest man. And the anterior and posterior medio-frontal (*F² i.g.s.*) terminal cross-pieces, of alleged full-blown typical formation, conduce to the same appeared of obliquely transverse form. The short transverse furrow-pieces on

anterior third of first frontal gyre's upper aspect add to the appearance; also the radially-set parallel gyres and sulci springing upward and forward from near the anterior angle of Sylvian fossa, about where part of the cap of the third frontal gyre usually fuses with the second frontal gyre, add to the appearance of obliquity; and so does a similarly directed beamwork of cortical scaffolding sometimes breaking up the second intra-gyral sulcus.

In a few apes a very similar disposition exists more or less, as in the chimpanzee in which the first frontal sulcus may be in three or four separate and distinct pieces, placed one in front of the other, at a short distance from the mesial border.

In the above examples, then, is a tendency for the many fissures to run obliquely upward, forward and inward towards the upper or front hemispherical edge.

This condition, when in the adult brain it replaces the more usual disposition, substituting relative obliquity for relative antero-posterior trend; in some cases apparently indicates persistence of foetal character and some degree of developmental arrest; in some, possibly, even indicates reversion.

SYLVIAN FISSURE AND FOSSA.

Incidentally, in describing the deviations of other parts, most of that has been stated, which need be said about the Sylvian, in this article. And its various occasional confluences have been mentioned; perhaps all except one now and then found with the front end of the first temporal sulcus. In such last, if it is conjoined with the "fissure-girdle" already mentioned in Chapters I and II., and with a slight advance of the collateral, the irregular girdle of sulci would be complete.

Unusual confluences of the Sylvian mark, so far, a deviation in form, and, often at least, mean defective formation of opercula and of annectant gyres.

It has been held (*e.g.*, by Mills) that the higher the type the shorter, relatively, is the horizontal posterior limb of the Sylvian likely to be, and that a relatively long Sylvian (*h'*) is apt to occur in brains but little evolved. And besides greater *relative* length of horizontal posterior limb of Sylvian fissure seeming to mark inferiority, a tendency towards unduly

vertical position of the same has been noted in brains of idiots and negroes.

Indeed, in microcephales the tendency to perpendicular position may be very decided.

These views concerning the last two points seem to be confirmed by the researches of Cunningham, who found that:—

(a.) The average *relative* length of the posterior horizontal ramus of Sylvian fissure (*i.e.*, the length-index of this ramus *relatively* to the lateral length of the same hemisphere taken as 100) is greater in human foetus and in apes, especially lower apes, than in human adult.

(b.) The average Sylvian angle (*i.e.*, the angle made by the posterior horizontal ramus with a line drawn perpendicular to the greatest antero-posterior hemispherical length) is low in foetus (though high in first year), and is *greater* as life advances from childhood to the adult status, and is also greater in the human—than in the ape—brain, and on left side than on right.

And previously to him, in brains of adult white persons, Eberstaller found the external lateral part of the Sylvian to be, *on the average*, longer by $6\frac{1}{2}$ mm. on the left side than on the right. This was partially compensated, in a way, by the greater average length, on the right side than on the left, of the continuation by the ascending spur of the terminal fork.

The same main line of the Sylvian fissure was also slightly longer (2 mm.), on the average, in the females than in the males. This is striking when the lesser general *absolute* measurements of the brain of the female are taken into consideration.

Shortening of the Sylvian fissure, therefore, is a character of the human, and especially of the male, brain. On the contrary, a great relative length of the external Sylvian fissure denotes a formative reversion.

In Man and orang the back part of the Sylvian and first temporal sulcus are shortened, and the parietal lobe gains surface-extension from before backward.

But in lower apes the Sylvian is joined by first temporal sulcus and runs far up, being longer and more oblique than in higher ape-forms. Then, as we ascend the scale, the supra-marginal gyre, which in lower apes is sunken in the Sylvian depth, is observed to gradually attain the surface

—at first on one side and inconstantly, but in higher forms on both sides and constantly—to become broader and broader; and, instead of forming a single loop, to be doubled or complicately convolute.

In Man, the region of these recent gains is still very variable, and the deep transverse temporo-parietal annectant gyres, like fresh invaders, seem to struggle to attain the surface.

Broca stated that the anterior horizontal branch of the Sylvian fissure is always present in Man and in all anthropoids, and probably in them only; and that the anterior ascending branch exists nearly always in Man; frequently in the orang and chimpanzee, and in them often in a rudimentary form; but is not existent in the gibbon or gorilla. These two anterior branches of the Sylvian he attributed to elongation of the third frontal gyre which folds itself in accommodation to the small compass of the region it occupies. In his view, the anterior horizontal branch is the principal and almost sole character which distinguishes the cerebral type of anthropoids from that of other apes. The anterior ascending branch he stated to be absent, in Man, in abnormal brains only; most examples of the kind being "idiots and microcephales." But in a number of persons, other than these, there is no separate anterior ascending Sylvian branch; it and the anterior horizontal being both conjointly represented by a single anterior Sylvian branch directed obliquely upward and forward.

(To be continued.)

The Treatment by Suggestion, with and without Hypnosis. By JOHN F. WOODS, M.D., Medical Superintendent, Hoxton House, Asylum, London.

I have much pleasure in acceding to the request of the editors of this Journal to give my personal experience of "suggestion" (with or without hypnosis) as a therapeutic agent.

Having for many years been impressed by the impotency of drugs in the treatment of mental and nervous diseases, I resolved to try the effect of the so-called hypnotic treatment. I was prompted to this by the reading of an article on this subject by Dr. Robertson.* I commenced experiments in September, 1892, and have continued working at

* See *Journal of Mental Science*, Oct., 1892, p. 494.

the subject ever since. I started with very decided scepticism as to the value of this method of treatment, but, as will be seen by the summary of the cases appended, results have proved its efficacy, and have indeed shown that in certain disorders no other mode of treatment can compare with it.

I have found suggestion, with or without hypnosis, useful not only in mental diseases, but in all nervous affections, especially those known as "functional." By referring to the lists of cases, it will be noticed that I have obtained good results in chorea and other forms of spasm, neuralgia (notably trigeminal, sciatica, etc.), headaches, insomnia, rheumatism, gout, asthma, palpitation, nervous dyspepsia, chronic alcoholism, and various forms of mental disease, especially melancholia. I have also had some success in epilepsy. In the majority of my cases I get a good result without the sleep. I find for instance that by simply placing my hand on the painful part, in a case of neuralgia, I can by mere suggestion, coupled with gentle pressure, remove the pain. From one to five minutes of this treatment is generally sufficient to remove the pain of toothache, facial neuralgia, or sciatica.

The most simple method of producing hypnosis in my experience is to place the patient in an easy chair, and after getting him to shut his eyes, and to relax the muscles of his arms and legs as much as possible, and telling him to abandon himself to thoughtlessness, to place one hand on his head, and with the other stroke his forehead very lightly; at the same time repeatedly suggesting sleep.

I have indeed often sent a patient to sleep (hypnotically) simply by telling him to relax the muscles, shut the eyes, and remain in one position for about 20 minutes. This method is alike simple, efficacious, and agreeable. I have never seen any untoward symptoms follow from it.

I select the following illustrative cases from my notebook. The remainder (in order to save time and space) I have put in the form of schedules.

Facial Neuralgia.

A. L. W., female, single, age 24.

Suffered from facial neuralgia for four years. No medicine relieved her for more than a few days. She could not sleep, and was weak and depressed.

Hypnotised for the first time October 9th, 1892, and sug-

gestions given that *she was to sleep for 15 minutes, to awake with no pain, be bright and cheerful, and sleep well every night.*

Everything, greatly to my surprise (this being one of my first cases), happened as suggested. The patient awoke laughing, without any pain, slept well every night, the neuralgia not returning until 12 days afterwards, when she was again hypnotised, since when (with the exception of a few hours' pain due to carious tooth during November, 1895) there has been no recurrence of the pain.

This case was shown before the Hunterian Society on April 12th, 1893.

Athetoid Movements of Right Hand.

Case shown by Sir Hugh Beavor before the Hunterian Society on January 22nd, 1896. Sent to me by him for treatment January 27th, 1896.

M. C., a servant girl, 16 years of age. She was admitted in King's College Hospital under Dr. Ferrier July 13th, 1895, with tremor of right hand.

Family History.—Her mother had eight children: three miscarriages.

Personal History.—Dr. Pritchard removed polypi for obstruction of the nose six weeks ago. Two years ago at commencement of menstruation, and after excitement of brother's illness, tremor of the whole body began, shaking the bed; it lasted two weeks; improved gradually until right arm and hand alone were affected; after three months all tremor had ceased. A fright of trivial character six months later induced great stuttering for a fortnight, and movements in arm till Christmas (six months). Since this, every three months an attack of tremor has seized the right arm. Sometimes grimaces, jerking of the head and jerky speech would be present, and occasionally the left arm was implicated. Except slight anæmia and loss of knee-jerk, nothing abnormal but tremor has been noticed during four weeks' stay in hospital. The tremor is described as rhythmic, increased by voluntary movements and by excitement; rate six per second. The chief movement is of the hand from right to left, as it is held in a semi-prone position. She was treated by spinal douche, and then by putting the right arm in plaster of Paris, and discharged with very slight movements. Re-admitted on December 11th, 1895. Movements when awake have not ceased since discharge. Movements of arm and tendon reflex as before. Chloral hydrate, gradually increased up to gr. xx every three hours;

Jan 27th 1896
Mary
Graham
a Royal Oak
Place
Forest Hill
Brook

[Signature]

Jan 30th 96

Mary Barnes
2 Royal Oak Place
Forest Hill Road

4.20 PM

Jan 31st 96

Mary Barnes
2 Royal Oak Place
Forest Hill Road

arm &
movemen
ments w
Movemen
hydrate, g

Feb 17 85-15

Mary Combs
2 Royal Oak Place
Forest Hill Road

Feb 17 85-15

Mary Combs
2 Royal Oak Place
Forest Hill Road

Feb 8th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 10th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 6th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 7th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 8th '96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 10th '96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 14th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road.

Feb 15th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 20th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

Feb 29th 96

Mary Coombes
2 Royal Oak Place
Forest Hill Road

slightly less tremor; stopped December 19th. Liq. Coninæ Hydrobromatis, five per cent. sol. m. ii. bis die injected. January 11th, dosage increased to m. viii. There has been no improvement of any permanent character.

I treated M. C. by short hypnotic sleeps daily, Sundays excepted (each sleep lasting about one hour), for the first three weeks, and then at intervals until March 8th, 1896, when the tremor entirely ceased, and there has been no appreciable return of it since that date.

The specimens of M. C.'s handwriting are interesting,* as they show clearly how steady the improvement was in her case.

This patient was shown again last March before the Hunterian Society by Sir Hugh.

A Case of Melancholia.

E. B., age 16, admitted December 20th, 1893.

In great distress, continually crying, has delusions, fancies that she is lost, says she wishes to die and asks us not to burn her; full of self-accusations about being very wicked and going to hell, sleeps badly and refuses her food.

In weak bodily health, has no organic disease.

Had ordinary asylum treatment with no improvement until the 2nd week in January, 1894, when she was hypnotised about three times, the suggestion being given during hypnosis that she was to sleep, and awaken feeling better; distinct improvement.

3rd week.—Hypnotised twice with same suggestions. Improving in every way.

4th week.—Hypnotised twice. Has good nights, takes her food well and is much stronger, has given up crying for some days.

February 10th.—Has not been hypnotised since January, is going on well and gaining in weight, generally cheerful.

March 21st.—Health much improved, always cheerful, very industrious, helps the nurses.

April 3rd.—Quite convalescent.

Trigeminal Neuralgia.

W. W. B., male, age 50, was sent to me from Guy's Hospital by Mr. Charters J. Symonds. This patient has suffered from neuralgia since 1887, which gradually became worse. During the past five years he was operated on three times by Mr. Symonds; at the last operation Meckel's

* See illustrations. Mary Coomber.

ganglion was removed—he also had some teeth extracted. The pain returned after an interval of improvement.

I saw this patient on the 1st, 2nd, and 3rd of September, 1896, and he improved rapidly under suggestion and slight hypnosis; nearly all his pain disappeared after the first sitting, he slept well, was cheerful, and his appetite became excellent.

On September 11th, Mr. Symonds wrote congratulating me on the success of the treatment, saying that:—“*the change in the man is something remarkable—he is different in every way, his whole view of life is changed; and from being depressed, miserable, suicidal, he is bright, free from pain, and ready and anxious for his work.*”

I have lately seen this patient, and he has gained in weight, generally has excellent nights, is following his occupation and seldom has any pain.

M. A. B., case No. 18 on the *Chorea* schedule, was sent to me by Dr. Corner on April 24th, 1896, when I was unable to hypnotise her; however, I succeeded fairly well on May 1st, and I send specimens of her writing to show the effect of one hypnosis.*

The Rationale of the Hypnotic Treatment.

I do not propose to discuss the physiology of hypnosis, for this can only end in vague and unprofitable speculation. It will, however, be of advantage to briefly inquire into the rationale of hypnotic treatment—the way, namely, in which it does good.

It is a fact well known to psychologists that every idea tends to work itself out. Thus, standing on the edge of a precipice, suggests the idea of precipitating oneself over it. When this idea occurs to the mind, there is felt an impulse to carry it into effect, and if the individual be weak-willed, he may blindly obey this impulse. In like manner, the sight of a razor, or a bottle of poison, may suggest suicide, and actually lead to it. Thus it is with all ideas; a child beholds a beautiful flower, and the idea of plucking it is almost mechanically obeyed; a hungry man sees a loaf of bread, and the impulse to appropriate it may be too strong for him to resist.

This fact, that all ideas tend to become actualities, has led psychologists to assert that the idea of an act is the act potentially. It is assumed, *i.e.*, that the cortical changes

* See illustrations. Mary Ann Brown.

24th April 1896.

Mary Ann Brown



May 1st 1896

*Henry
and
Oscar*

Writing after first hypnosis

underlying the idea of an act are those which initiate the act. When this is not performed, these nervous changes, underlying the idea, are practically confined to the cortex; but when it is actually performed, there is an overflow, so to speak, of nerve force towards the periphery, whereby the muscles engaged in the performance of the act are energised. When this happens we must assume that the initiatory cortical changes acquire a high degree of intensity.

Now, how comes it that the intensity of these initiatory changes is not always sufficiently great to lead to the performance of the act—that ideas of acts do not always become actualities? It is either because the idea is, in the first instance, not sufficiently vivid, or what comes to the same thing, that the cortical processes underlying it are not sufficiently intense; or because other ideas are called up by association, and these having a similar tendency to work themselves out, a conflict ensues, causing a temporary inhibition of action.

There is a struggle for mastery among the various ideas, the strongest gaining the day. Directly action follows, as the result of such a conflict, we have an act of will. So long as one idea only, occupies the mental field, to the exclusion of all others, we cannot, in my view, regard the action following from it as an act of will. Rather must we regard it as a mental reflex—as a reflex action starting in the retina, and involving the highest cortical centres; or in the language of Dr. Harry Campbell, “a simple mento-motor action.” It is not until there is a struggle for mastery among two or more impulses to action, that will, in the proper sense of the term, displays itself (“compound mento-motor action”). Let us take the case of a man standing at the edge of a cliff. If no other idea than that of throwing himself over the cliff suggests itself to him, and that idea be sufficiently vivid, he must needs obey it promptly. It may be thought that it is impossible for the mind to be chained down to one idea alone; that other ideas will necessarily arise by association. When the mind is deranged, however, there is an interference with the normal association of ideas; and an idea, especially such an impressive idea as suicide, if vividly excited, may take possession of the mind to the exclusion of all others, and under these circumstances it is certain to become an actuality. If, however, the individual be of sound mind, other ideas will suggest themselves to him, above all, the

absurdity of obeying the mad prompting. These ideas will rapidly rise to an intensity greater than that of the initial idea, until finally the idea of walking away from the cliff will become so powerful that it will work itself out.

Now, when an individual is thrown into the hypnotic state, his mind is practically a blank. Ideas may, however, be excited in it by suggestion, and these ideas tend to occupy the mind to the exclusion of others; that is to say, instead of calling up other ideas, so that a complex train of thought ensues, as happens in the case of all sane individuals when awake, an idea suggested to the hypnotised individual tends to take entire possession of the mental field. The condition of mind may then be compared to a blank screen on to which an image is thrown by a camera.

It is true a few associated ideas may cluster round the suggested idea, but this latter persists as a central idea, round which others revolve, so that the mind is not led by a train of associated ideas, away from the suggested idea. It would be interesting to inquire into the cause of this, but such an inquiry would lead us too far afield. It is sufficient to point out that one of the most characteristic features of the hypnotic state, psychologically considered, is the tendency for ideas to stagnate.

Now, seeing that an idea can in this way be made to dominate the mind for a length of time (that the entire consciousness is, as it were, concentrated upon it), it is not surprising that it should rise to a high intensity. A very vivid idea being thus the sole occupant of the mental field, it follows, from the principle enunciated, that it will act itself out. Hence, when a person is hypnotised, it is only necessary to suggest that he shall do a certain thing and he does it.

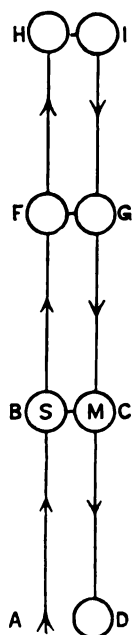
I have said that an idea suggested to an individual while in the hypnotic state acquires an unusual power, by reason of the fact that the whole mind is focussed upon it. It is attended to in the strictest sense of the term, for there are no distracting influences. Individuals differ greatly in regard to this power of attention, one of the most valuable mental attributes. It may be defined as the power of focussing the mind upon one idea, or group of ideas, to the exclusion of all others. It is possessed in a large degree by men of strong character and iron will. Indeed, strength of will largely depends upon it, for if an individual, as the result of reasoning, comes to the conclusion that a certain course of action is the right one, it

underlying the idea of an act are those which initiate the act. When this is not performed, these nervous changes, underlying the idea, are practically confined to the cortex; but when it is actually performed, there is an overflow, so to speak, of nerve force towards the periphery, whereby the muscles engaged in the performance of the act are energised. When this happens we must assume that the initiatory cortical changes acquire a high degree of intensity.

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There is a struggle for mastery among the various ideas, the strongest gaining the day. Directly action follows, as the result of such a conflict, we have an act of will. So long as one idea only, occupies the mental field, to the exclusion of all others, we cannot, in my view, regard the action following from it as an act of will. Rather must we regard it as a mental reflex—as a reflex action starting in the retina, and involving the highest cortical centres; or in the language of Dr. Harry Campbell, “a simple mento-motor action.” It is not until there is a struggle for mastery among two or more impulses to action, that will, in the proper sense of the term, displays itself (“compound mento-motor action”). Let us take the case of a man standing at the edge of a cliff. If no other idea than that of throwing himself over the cliff suggests itself to him, and that idea be sufficiently vivid, he must needs obey it promptly. It may be thought that it is impossible for the mind to be chained down to one idea alone; that other ideas will necessarily arise by association. When the mind is deranged, however, there is an interference with the normal association of ideas; and an idea, especially such an impressive idea as suicide, if vividly excited, may take possession of the mind to the exclusion of all others, and under these circumstances it is certain to become an actuality. If, however, the individual be of sound mind, other ideas will suggest themselves to him, above all, the

and efferently with centres in the spinal cord and base of the brain. Take for instance a limited portion of muscle



or gland substance. This is provided with an afferent nerve (A.B.) furnished with a suitable end-organ (A.) adapted to receive nerve impressions, an efferent nerve (C.D.), terminating in the muscle or gland (D.), a receptive or sensory ganglion cell (B.) placed in connection with a motor ganglion cell (C.), whose function it is to send impulses down the efferent fibre (C.D.) to the muscle or gland (D.). The two ganglion cells (B.C.) constitute a so-called *sensory-motor*, or better, *affero-efferent centre*, and we must suppose that all non-nervous parts of the body are provided with such affero-efferent centres, these collectively constituting the so-called lowest nervous level.

As evolution proceeds, we have higher and higher nervous levels super-imposed; each higher level growing out of the one next below it, and the highest constituting the anatomical sub-stratum of mind. Thus, referring again to one limited patch of tissue, with its nervous system (A.B.C.D.) we must

suppose a higher arc B.F.G.C. to develop in connection with it, constituting the next highest level; and again, that from this last, a yet higher arc F.G.H.I. is developed, constituting the highest level (for we may, for convenience, limit the nervous levels to three). On this hypothesis H.I. constitutes the physical basis of mind, and whatever sensations are felt in connection with our limited patch of tissue, and whatever dynamical effects are produced in it, as a result of mental action, will be produced through H.I. According to this hypothesis all the non-nervous parts of the body are provided with a similar nervous apparatus, all of them being thus definitely represented in the cortex, *i.e.*, every minute part of the body has a definite part of the cortex belonging to it, through which it feels, and through which, moreover, it can be dynamically affected. Hence not only the voluntary muscles, but the vessels, glands, and all other tissues can be influenced through the cortex. Indeed, physiologists now recognise the existence in the cortex, not

only of centres definitely related to the muscles (the kinæsthetic centres of Bastian, and the motor centres of Ferrier), but vaso-motor, trophic, thermic, and other centres. That, apart altogether from theory, the body can be dynamically affected, though the cortex is clearly shown by observing the bodily effects of a strong emotion, which may cause secretions to be exaggerated or dried up, muscles to be convulsed or paralysed, and the vaso-motor system to be profoundly disturbed. It may, however, be argued that this is no proof that all parts of the body are definitely related to or represented in the cortex; that it merely proves a connection of some kind between the brain and the body. This is a valid objection, but it can be met. There is one remarkable fact, and one most suggestive from our present point of view, which appears to me to prove the correctness of Hughlings Jackson's assumption, namely, that when the attention is directed to any limited part of the body, not only is a sensation soon felt in the part, but after a time a definite dynamical effect is produced in it. Thus, if the attention be directed to the tip of the finger it before long will begin to tingle, and in course of time the vessels will dilate, and it is an authentic fact that a blister has actually been produced in this way. Now it is, as Harry Campbell observes, perfectly clear that that part of the cortex which is engaged in such an act of attention must be definitely connected with the part attended—in other words the latter must be definitely represented in the cortex; and further that the peculiar enervation of this particular part of the cortex constitutes on the physical side, what is, on the psychical side, an act of attention to the part. Hence we see how it is that by concentrating the attention on a particular part of the body we influence that part as well as the entire nervous system belonging to it.

This conception enables us to explain how abnormal sensations and abnormal motor states (such as spasm and paralysis) may be made to vanish by means of suggestion. Thus, suppose we hypnotise a person who has pain in a certain region of the body and make the suggestion that the pain will vanish. The "anatomical substratum" of this pain is the cortical representative of the part to which the pain is referred, and while the pain is felt this portion of the cortex is in a peculiar state. Now when we suggest to the patient that his pain will vanish his attention is directed to the painful part, and seeing that this act of attention involves those nervous arrangements of the cortex which

constitute the physical correlatives of the pain, it is manifest that we make by our suggestion an impression on the very parts engaged in the morbid process. And not only so, but we impress the cortex in a very specific way, for by suggesting that the pain shall vanish we suggest an idea, the vivid realisation of which is inconsistent with the feeling of pain in the part. When the highest cortical centres are evolving pain (if I may be allowed the expression) they cannot evolve the idea that there is no pain. It is quite impossible to vividly think of no pain being in a part whilst the pain actually exists. Directly the individual has a vivid idea that there is no pain the pain must necessarily have vanished. By suggesting the idea then that the pain shall vanish, we throw the cortical cells implicated in the pain into a condition incompatible with the evolution of the pain. And not only do we influence the cortex, but the whole of the nervous arc and non-nervous tissue belonging to it—a fact of great practical importance, seeing that the pathological cause of the pain may reside in any part of this system. The disappearance of spasm, or paralysis, may be explained on similar lines.

By suggesting, for instance, that a spasm of the face should disappear we act specifically upon the very parts of the nervous system implicated in the abnormal condition.

The above remarks on the influence of suggestion in curing diseases refer to suggestions made to an individual while in the hypnotic state, when, for the reasons given, they tend to impress the mind with peculiar force. It is manifest, however, that suggestions made to a person while awake will tend to act in a similar manner. Inasmuch, however, as they affect the mind less powerfully under these circumstances than during hypnosis, owing to the distracting influence of associated ideas on the idea suggested, the latter will be less vividly realised than during hypnosis. Nevertheless, as I shall more particularly explain on another occasion, I have obtained remarkable results by suggestions when the patient has been actually awake or only partially hypnotised.

The success in these cases depends upon our ability to impress the patient's mind with one idea to the exclusion of others, and one reason why a physician who has especially devoted himself to curing disease by suggestion, and who has obtained some reputation in this line of work, obtains better results than others, is because patients much more readily abandon themselves to his suggestions than to those made by others.

TABLE I.—CHRONIC ALCOHOLISM.

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnooses.	Date.	Result.	Remarks.
1.	E. M.	F.	30	10 years.	Several.	March to June, 1893.	Good, for some months.	Treated as an in-patient: improved a great deal, but relapsed some time after discharge. Would drink scotch, spirits of wine, &c. Shown at Hunterian Society.
2.	Mr. S.	M.	42	10 years.	Several.	April to Dec., 1893.	Fair.	This patient improved a great deal, but would break down about every 6 months.
3.	H. A.	M.	47	Several years.	Five.	March and April, 1893.	Good.	Was shown at Hunterian Society, April 12th, 1893. £25 was offered him if he would drink a glass of whisky and water, but he could not. Shown again April 11th, 1894, having kept well. Before treatment he took the pledge 47 times.
4.	Mr. D.	M.	34	2 years.	Two.	November, 1894.	Good.	This patient heard voices, but he improved after hypnooses, and is, I believe, well now.
5.	Miss T.	F.	38	3 years.	Six.	Feb., March, and April, 1896.	Good.	I heard from patient Christmas, 1896, and she is keeping well.
6.	Miss A.	F.	41	Some years.	Twelve.	July, Oct., Nov., & Dec., 1896.	Improved.	This patient had no desire to be cured; but after treatment she took considerably less stimulant than before.
7.	Mrs. W.	F.	29	Some years.	Six.	July, 1893.	Good.	I have not heard of this case lately, but in June, 1894, she was keeping well.
8.	P. C.	M.	36	Some years.	Six.	July, 1896.	Good.	I heard a few months ago that this man, who is servant to a doctor, has given no trouble since first treated (with but one exception).
9.	Mr. B.	M.	40	10 years.	Seven.	August, 1894.	Good.	I saw this patient last year and he is keeping fairly well. Sometimes takes a little beer with his meals.
10.	Mr. G.	M.	42	Several years.	Six.	Nov. and Dec., 1896.	Good.	This patient left well.
11.	Mrs. R.	F.	36	Several years.	Eight.	November, 1896.	Improved for a short time only.	This patient relapsed soon after treatment, and is still drinking at intervals.

TABLE I.—CHRONIC ALCOHOLISM (*continued*).

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnoes.	Date.	Result.	Remarks.
12.	Mr. S.	M.	40	Some years.	Six.	April and May, 1896.	Recovery.	Seen last December, as he was not quite sure of himself—is, however, doing well.
13.	F. P.	M.	39	Some years.	Eight.	May & Aug., 1894. October, 1896.	Kept well for 14 months after 2nd period of treatment, then relapsed.	Treated on three separate occasions.
14.	Mrs. P.	F.	36	Some years.	Four.	February, 1896.	Much improved.	Her husband told me last December, that the patient had been very well since I treated her, and had had only one slight relapse.
15.	Mrs. B.	F.	38	18 years.	Six.	November, 1894.	Improved.	Used to break down about every 3 weeks. Now relapses once in 4 or 5 months.
16.	Mrs. E.	F.	36	Some years.	Six.	Feb. and March, 1896.	Improved.	Had one relapse since the treatment, but is very well at the present time.
17.	Mr. M.	M.	40	Some years.	Six.	July, 1896.	Relapsed.	Relapsed a month after treatment.
18.	C. de St. C.	M.	38	Some years.	Six.	May, 1896.	Recovery.	I believe this patient is keeping well.
19.	Mr. B.	M.	38	Some years.	Several.	Sept., Oct., and Nov., 1896.	Much improved.	Had some peripheral neuritis, which disappeared in a few days
20.	Mr. B. B.	M.	40	2 years.	Six.	Oct. and Nov., 1896.	Recovery.	Was taking on an average a quart of whisky daily, besides other liquor. Gave up drinking after first hypnosis.
21.	Mr. B.	M.	38	Some years.	Three.	July, 1896.	Much improved.	Is keeping well.
22.	A. E.	F.	42	Some years.	One.	June, 1896.	Much improved.	Is keeping well
23.	Mr. M.	M.	28	Some years.	Three.	November, 1896.	Much improved.	
24.	Dr. M.	M.	38	Some years.	Six.	Oct. and Nov., 1896.	Improved for a short time only.	
25.	A. D.	M.	42	Some years.	Several.	Oct., Nov., and Dec., 1896.	Recovery.	Sent by Dr. Wallis.
26.	E. G.	F.	30	Some years.	Four.	July and August, 1896.	Improved and then relapsed.	Has been better lately.

TABLE II.—NEURALGIA (*Sciatica*).

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnoes.	Date.	Result.	Remarks.
1.	H. B.	M.	30	Some years at intervals.	Two.	October, 1893.	Recovery.	February, 1897: Has had no return.
2.	P. L.	M.	38	6 months.	Suggestion only. Seen twice.	April, 1894.	Recovery.	February, 1897: Has had no return.
3.	Mr. C.	M.	77	4 years.	Suggestion only. Seen four times.	June and July, 1895.	Relief for a few days only, after each treatment.	
4.	Mrs. W.	F.	70	6 months.	Suggestion only. Seen five times.	Oct. and Nov., 1894.	Apparent recovery for 2 weeks, and then a relapse.	
5.	Mrs. R.	F.	60	Some months	Suggestion only. Seen six times.	March, 1896.	Not much relief.	Patient persisted in taking morphia whilst under treatment, consequently I could not influence her.
6.	C. A. P.	M.	32	18 months.	Suggestion only. Seen four times.	February, 1896.	Good.	Has had very little pain since first treatment.
7.	Mr. B.	M.	42	6 months.	Suggestion only. Seen five times.	June and July, 1896.	Recovery after one relapse.	Sent by Dr. HARPER, of Finchley. February, 1897: Is keeping well.
8.	Mr. H. M.	M.	52	8 months.	Suggestion only. Seen three times.	August, 1896.	Very little improvement.	Sent by Dr. HARPER, of Finchley.
9.	Mr. W.	M.	38	6 months.	Suggestion only. Seen twice.	January, 1897.	Recovery.	
10.	Mr. F.	M.	45	3 months.	Suggestion only. Seen once.	December, 1896.	Recovery.	About 18 months ago I treated this patient for sciatica of his right leg; in December, 1896, for sciatica in his left leg. The pain in the right leg did not return, and he is doing well.

TABLE III.—MENTAL DISEASES.

No.	Name.	Sex.	Age.	Duration of Disease, before Treatment.	No. of Hypnotoses.	Date.	Result.	Remarks.
12.	Mrs. M.	F.	38	4 months.	One.	October, 1892.	Recovery.	Melancholia, with delusions that persons were following her to eat her up. Appeared quite well after one hypnotosis.
13.	A. K.	F.	28	6 months.	Seven.	Dec., 1892, to June, 1893.	Recovery.	Puerperal Mania—was quiet for eight hours after first hypnotosis; although she had been shouting for five days before treatment, was made to sleep by suggestion given during the day.
14.	E. J.	F.	28	10 months.	Several.	March, 1894, to January, 1895.	Improved at times.	Had outbreaks of mania, when she was violent, but could always be controlled for a time, by hypnotism and suggestion.
15.	Mrs. F.	F.	42	6 weeks.	Three.	December, 1896.	Improved.	Melancholia, with delusions that everything had gone from her.
16.	M. A. G.	F.	47	3 months.	Two.	July to October, 1894.	Recovery.	Melancholia, heard voices, and had facial neuralgia.
17.	Col. G.	M.	52	6 months.	Two.	December, 1896.	Much improved.	Melancholia.
18.	Mrs. P.	F.	56	Some months.	Several.	August to Dec., 1895.	Recovery.	Melancholia and acute pain in back; also fancied she was being injured. Sent by Dr. LEESST FRANK.
19.	Mrs. T.	F.	48	6 months.	Three.	July to Dec., 1896.	Improved.	Mania with delusions.
20.	Miss C.	F.	26	13 months.	Six.	July and August, 1896.	Recovery.	Melancholia, and complained of noises in her head; would not exert herself.
21.	Miss W.	F.	24	4 months.	Three.	Feb. to June, 1896.	Recovery.	Mania and delusions.
22.	Mrs. E.	F.	42	Some years.	Six.	June, 1896.	No better.	Melancholia with delusions.
23.	Mrs. W.	F.	45	18 months.	Two.	August, 1896.	Improved.	Melancholia with delusions.
24.	Mr. P.	M.	28	Some years.	Several attempts, but not successful.	May to Nov., 1894.	No appreciable change.	Dementia; would not speak and was depressed.
25.	E. W.	F.	25	5 weeks.	Four.	Nov. and Dec., 1894.	Recovery.	Melancholia, with suicidal tendency.
26.	H. B.	F.	16	4 months.	Seven.	Dec., 1893, to April, 1894.	Recovery.	Melancholia, with delusions and refusal of food.

TABLE IV.—GOUT.

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnoses.	Date.	Result.	Remarks.
1.	Mr. B.	M.	70	2 years.	Suggestion with manipulation. Seen four times.	December, 1895.	Apparently recovered.	Gout of left hand and arm.
2.	Mr. N.	M.	46	Several years.	Suggestion with manipulation. Seen about eight times, afterwards called at intervals to show himself.	April and May, 1896.	Recovery.	I treated this patient for his fortieth attack of gout, which affected both knees, ankles, feet, right wrist and shoulder. He has had no attack since last April. He told me that, as a rule, he had four to six attacks each year.
3.	Miss C.	F.	48	Some years.	Suggestion with manipulation. Seen once only.	February, 1896.	Recovery.	Was treated for five minutes only, for gout in right knee. Has had no trouble since.
4.	Mr. S.	M.	39	4 months.	Suggestion with manipulation. Seen twice.	April, 1896.	Recovery.	Had gout in both hands. Was an omnibus driver, and was able to drive after first treatment, in fact same day as treated.
5.	M. A.	M.	38	Some months.	Suggestion with manipulation. Seen twice.	October, 1896.	No improvement.	
6.	Mr. H.	M.	70	8 months.	Suggestion with manipulation. Seen twice.	January, 1896.	Much improved.	Had gout in both knees, both hands and shoulders.
7.	Mr. G.	M.	28	3 years.	Suggestions with manipulations. Seen several times.	July, Aug., Oct., and Nov., 1896.	Improved.	Gout—chiefly in both heels and ankles.

TABLE V.—HEADACHE.

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnoes.	Date.	Result.	Remarks.
1.	Miss L.	F.	24	6 months.	Suggestion and hypnosis. Seen seven times.	June, July, and August, 1894.	Recovery.	
2.	Mrs. O.	F.	42	2 years.	Suggestion and hypnosis. Seen four times.	July, 1894.	Much improved.	Sent by Dr. GARRATT. Pain very severe; had syphilis. No medicine gave her relief.
3.	Miss W.	F.	26	18 months.	Suggestion and hypnosis. Seen twelve times.	June, July, and August, 1894.	Recovery.	Had headache, pain in back, and insomnia.
4.	Mr. B.	M.	70	6 months.	Suggestion only. Seen once.	January, 1896.	Recovery.	Pain was caused by a fall on the head.
5.	Mrs. H.	F.	40	12 months.	Suggestion and slight hypnosis.	January and May, 1896.	Recovery.	
6.	J. F. H.	M.	37	4 years.	Suggestion only. Seen four times.	July, 1896.	Recovery.	Had also pain in præcordial region, which disappeared under treatment.
7.	S. G.	M.	43	6 months.	Suggestion only. Seen four times.	March, 1896.	Recovery.	
8.	Miss S.	F.	40	Some years.	Suggestion with hypnosis. Seen twelve times.	Oct. and Nov., 1895.	Improved.	Sent by Sir HUGH BARBOR. From King's College Hospital; after treatment was shown at the Hunterian Society, March 25th, 1896. Sent by Dr. H. CAMPBELL. This patient also suffered from deafness.
9.	N. N.	F.	17	Some years.	Suggestion with hypnosis. Seen several times.	April, May, and June, 1896.	Improved for a time.	Sent by Dr. FERRIS. From King's College Hospital.
10.	Mrs. J.	F.	40	Some years.	Suggestion only. Seen once.	November, 1893.	Recovery.	Had also pains in right shoulder.

11.	Mrs. W. F.	36	Some years.	Suggestion with hypnosis.	July, Aug., Nov., and Dec., 1896.	Recovery.	This patient was also deaf. Her hearing has improved.
12.	Mrs. W. F.	43	Several years.	Suggestion with slight hypnosis. Seen three times.	April, 1896.	Improved for a time.	
13.	Miss F.	34	Several years.	Suggestion only. Seen twice.	January, 1895.	Recovery.	
14.	M. T. F.	33	25 years.	Suggestion with hypnosis. Seen several times.	June, July, Oct., Nov., and Dec., 1896.	Improved.	Headache much worse at menstrual periods.
15.	Lady M. M.	70	3 years.	Suggestion only. Seen once.	January, 1897.	Recovery.	Caused through death of her husband.
16.	Mrs. P. F.	46	Many years.	Suggestion only. Seen four times.	Feb. and March, 1896.	Recovery.	
17.	Miss B. F.	32	8 months.	Suggestion only. Seen twice.	June, 1896.	Recovery.	
18.	Miss O. F.	26	Several years.	Suggestion and hypnosis. Seen six times.	Jan. and Feb., 1896.	Much improved.	Had headache daily as long as she could remember.
19.	Mr. G. M.	36	3½ years.	Suggestion only. Seen twice.	1896.	Recovery.	
20.	Mr. W. M.	39	15 months.	Suggestion only. Seen twice.	January, 1897.	Recovery.	Sent by Dr. Roort, of Enfield. Was also depressed, and unable to do his work.
21.	Mr. B. M.	26	2 years.	Suggestion with hypnosis.	January, 1897.	Improved.	
22.	Miss C. F.	41	Several years.	Suggestion only. Seen three times.	March and Oct., 1896.	Recovery.	This patient was also deaf, and had tinnitus, but appeared to be quite well when I saw her in October.

TABLE VI.—DYSPEPSIA.

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnooses.	Date.	Result.	Remarks.
1.	Mrs. W.	F.	46	30 years.	Seven. Suggestion, with and without hypnosis.	June and July, 1894.	Recovery.	All pains in chest, back and head removed. Patient told to take ordinary food, and she would not be sick.
2.	Mrs. H.	F.	40	12 years.	Six. Suggestion, with and without hypnosis.	December, 1895. Jan. and Feb., 1896.	Recovery.	Pains removed from chest and back. Patient rapidly gained in weight and has kept well.
3.	Miss B.	F.	18	8 months.	Suggestion only. Seen twice.	October, 1896.	Recovery.	Had pain in epigastrium and back. Has kept well.
4.	Miss F.	F.	30	9 months.	Suggestion only. Seen three times.	June, 1896.	Recovery.	Had pains after food, and was very depressed.
5.	Miss B.	F.	23	2½ years.	Suggestion and hypnosis. Seen fourteen times.	Oct., Nov. & Dec., 1896. January, 1896.	Recovery.	This patient had palpitation and pain in epigastrium.
6.	Miss P.	F.	26	4 years.	Suggestion and hypnosis. Seen four times.	Nov. and Dec., 1894. January, 1895.	Recovery.	Suffered from pain after food; headache and pain over eyes.
7.	Mrs. L.	F.	43	Some years.	Suggestion only. Seen three times.	December, 1896, and January, 1897.	Much improved.	Had palpitation and pain after food.
8.	Miss E.	F.	40	About 2 years.	Suggestion and hypnosis. Seen twelve times.	June, July, and August, 1896.	Recovery.	Indigestion, headache, and loss of appetite.
9.	Miss D. M.	F.	23	3 years.	Suggestion and hypnosis. Seen seven times.	Jan. and Feb., 1897.	Recovery.	Suffered from palpitation, anemia, and indigestion. Gained 8½ lbs. in weight in four weeks.
10.	Mrs. Q.	F.	44	4 years.	Suggestion and hypnosis. Seen twice.	Jan. and Feb., 1897.	Much improved. Still under treatment.	Indigestion and debility.

TABLE VII.—RHEUMATOID ARTHRITIS.

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	Treatment.	Date.	Result.	Remarks.
1.	Mrs. M. O.	F.	65	Some years.	Suggestion and manipulation. Only seen twice.	1896.	Much improved in movement, and pain removed.	Two shoulders affected, and elbow.
2.	Mrs. O. T.	F.	38	5 years.	Suggestion and manipulation. Also hypnosis. Seen five times.	Oct. and Nov., 1896.	Apparent recovery.	Both knees affected. Patient could not kneel or fully extend or flex the joints. Received a letter last June saying she was quite well.
3.	Mrs. E.	F.	50	5 years.	Suggestion and manipulation. Seen twice.	July, 1896.	Apparent recovery.	
4.	Mrs. B.	F.	49	3 years.	Suggestion and manipulation. Seen seven times.	July and August, 1896.	Apparent recovery.	Right knee affected.
5.	Mrs. T.	F.	70	10 years.	Suggestion and manipulation. Seen four times.	June, July, and August, 1896.	Some improvement.	Both hips and knees affected.
6.	Mrs. T.	F.	60	3 years.	Suggestion and manipulation. Seen four times.	Oct. and Nov., 1896.	Much better.	Left knee affected.
7.	Mrs. M.	F.	65	8 months.	Suggestion and manipulation. Seen three times.	Oct. and Nov., 1896.	Apparent recovery.	Left shoulder affected.
8.	Miss P.	F.	48	15 years.	Suggestion and manipulation. Seen three times.	Oct. and Nov., 1896.	Apparent recovery.	Both knees affected, also palpitation of heart.
9.	Mrs. M. C.	F.	36	10 years.	Suggestion and manipulation, with slight hypnosis. Seen four times.	December, 1896, January, 1897.	Improved. Still under treatment.	Left elbow, wrist, fingers, and shoulder affected. Elbow and wrist much better, but shoulder painful at times.
10.	Mrs. J. D.	F.	50	2 years.	Suggestion and manipulation without hypnosis. Seen once.	December, 1896.	Much improved. Still under treatment.	Both knees affected.

TABLE VIII.—NEURALGIA.

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnozes.	Date.	Result.	Remarks.
1.	A. L. W.	F.	24	4 years.	Three, with twelve days' interval between first and second.	October, 1885. November, 1885.	Recovery.	Severe facial neuralgia. Had been taking medicine nearly all the time before hypnotised. Had one slight attack in 1885 due to toothache, which was removed at once by suggestion.
2.	E. B.	F.	23	6 months.	Seven.	June and July, 1884.	Recovery.	Facial neuralgia and pleurodynia, also headache and depression.
3.	S. L.	M.	36	2 years.	Treated with suggestion and without hypnosis.	July, Oct., and Nov., 1884.	Much improved.	Sent by Dr. Rawes. Had neuralgia in right iliac fossa. Has had very little pain since last treated.
4.	J. D.	M.	44	About 6 months.	Treated by suggestion only. Seen five times.	November, 1884.	Apparently cured.	Sent by Dr. Watson. Neuralgia of right arm and hand.
5.	Mrs. B.	F.	25	About 6 weeks.	Treated by suggestion only. Seen twice.	March, 1885.	Recovery.	Facial neuralgia, which responded at once to suggestion with the hand on the seat of pain.
6.	F. N.	M.	25	About 1 year.	Three.	June, 1885.	Recovery.	Had facial neuralgia and indigestion. All pain disappeared after second treatment.
7.	A. H.	F.	20	About 7 weeks.	Suggestion only. Seen twice.	April, 1886.	Recovery.	Facial neuralgia, which disappeared after first treatment.
8.	H. T.	M.	70	8 months.	Suggestion both with and without hypnosis.	January and February, 1886.	Recovery.	Facial neuralgia of right side.
9.	N. P.	F.	38	Several years, at frequent intervals.	Suggestion only. Seen once.	July, 1886.	Recovery.	Facial neuralgia, chiefly of the left side; treated with hand on painful spot and suggestions. Well now, February, 1887.
10.	M. D.	F.	28	Some years, at intervals.	Suggestion only. Seen once.	November, 1886.	Recovery.	Treated same as above case.
11.	O. W.	M.	46	Some years.	Suggestion only. Suggestion and hypnosis twice. Seen three times.	May and June, 1886.	Improved.	Neuralgic pains, chiefly of right side. They were relieved, but returned again at intervals.
12.	E. A.	F.	60	2 years.	Suggestions only. Seen about seven-teen times.	Nov. and Dec., 1885. January, 1886.	Much improved.	Post-Herpetic Neuralgia. Sent by Sir HUGH BARROD, and shown at the Hunterian Society, both before and after treatment.

12.	J. S. W.	M.	65	6 years.	Suggestion only. Seen sixteen times.	Nov. and Dec., 1896. January, 1896.	Much improved.	Post-herpetic neuralgia. Sent by Sir HUGH BARNOR. Reported Hunterian Society's Transactions, 1896-1896.
14.	Mrs. S.	F.	77	2 years.	Suggestion and slight hypnosis. Seen four times.	June, 1896.	Recovery, after going away for a few days.	Sent by Dr. D. FERRIS, and seen with Dr. LEADAM. Neuralgia on right side of face, and pain in the upper jaw.
15.	M. B.	F.	21	About 18 months.	Suggestion and slight hypnosis. Seen five times.	March, 1896.	Recovery.	Facial neuralgia.
16.	H. J.	M.	36	About 2 years.	Suggestion and slight hypnosis. Seen seven times.	January, 1897.	Much improved. Still under treatment.	Facial neuralgia of left side. Neurotic heart and indigestion.
17.	Miss S.	F.	40	1 year.	Suggestion once. Suggestion with hypnosis once.	October, 1896.	Recovery.	Neuralgia of neck and spine; also asthma. All pain apparently removed, and asthma disappeared.
18.	Mrs. F.	F.	38	Some months.	Suggestion only. Seen once.	December, 1896.	Recovery.	Neuralgia of spine. Headache.
19.	Lady L.	F.	50	10 years.	Suggestion, with slight hypnosis.	January, 1897.	Recovery.	Neuralgia of leg, and right side of face.
20.	W. W. B.	M.	50	About 5 years.	Suggestion only. Sometimes with hypnosis. Seen three times, and again recently. Doing well.	September, 1896.	Apparent recovery.	Sent by Mr. CHARLES J. STROMBE. This patient had been operated on three times, and Meckle's ganglion was removed at third operation; also had some teeth extracted, but pain returned.
21.	L. S.	M.	36	About 3 years.	Suggestion only. Sometimes with hypnosis. Seen several times.	Oct., Nov. and Dec., 1896.	Apparent recovery.	Sent by Mr. CHARLES J. STROMBE, Guy's Hospital. Was operated upon, and had some teeth removed, but pain returned after operation, and was severe when speaking or eating.

LUMBAGO.

Major E.	M.	36	About 6 months.	Suggestion only. Seen once.	November, 1893.	Recovery.	Caused by fall from a horse. Pain removed at once by suggestion and hand on painful spot.
Mrs. R.	F.	37	About 4 weeks. Third attack.	Suggestion only. Seen once. Seen again April, 1895.	June, 1894. April, 1895.	Recovery for 9 months, and then no return.	Pain removed at once, and patient could stand upright. Same treatment as above.
Mr. D.	M.	38	About 2 weeks.	Suggestion only. Seen twice.	June, 1896.	Recovery.	Treatment by suggestion, and hand on seat of pain.

TABLE IX.—EPILEPSY.

No.	Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnoses.	Date.	Result.	Remarks.
1.	C. D.	F.	18	Some years.	Eight weeks. Sleep average, 22 hours a day.	December, 1893. January, 1894.	Gained in weight 14 lbs., and has improved, but not cured.	Sent by Dr. ARTHUR DAVIES. Had grand and petit mal. About two grand and several attacks of petit mal during the week.
2.	M. A.	M.	13	About 2 years.	Two. Very slight.	January, 1896.	Recovery. No fits since Nov. 23rd, 1895.	Had intense headache, which was removed by suggestion, and his irritable condition also improved at once.
3.	W. H.	F.	8½	About 2 years.	Eight.	Jan., Feb., March and April, 1895.	Recovery. No fit since first week in April, 1896.	Had grand and petit mal, about four attacks of the latter a day. It will be two years next April since the last.
4.	J. P.	M.	20	About 6 years. Average: 2 fits a week.	Twenty, with gradual improvements.	May, July, Aug., Nov., 1894. Jan., Feb., May, June, Aug., 1895.	Much improved. Has about one fit in 9 months.	Sent by Dr. LONG. February 1st, 1897. I heard of this patient two days ago, and he appears to be keeping very well and is at work.
5.	W. O.	M.	39	2 years. One fit grand mal every 3 weeks.	One. Very slight.	July, 1894.	Only seen once, not heard of since.	
6.	J. F.	F.	42	13 years under treatment for fits and headache. Seen 16 doctors.	Six slight. Pain removed from head, and fits been less.	Nov., Dec., 1894. January, 1895.	Much improved in every way, but not cured.	Her brother informed me, December, 1896, that his sister was not troubled with headaches, but had an attack of petit mal once in four months.

7.	V. B.	F.	31	10 years. About 8 fits a week. Caused by a blow on the head.	Several. Still under treatment.	May, June, July, Aug., Oct., Nov., Dec., 1894. Jan., Feb., March, April, May, 1895.	Much improved. Has about one fit a month.	Sent by Dr. Loxe.
8.	E. L.	F.	17	8 years. Has had treatment ever since.	Several.	Feb., March, April, May and June, 1895.	No improvement.	Sent by Dr. McOLYMONT. Her mind became affected, and she was sent to the Essex County Asylum.
9.	J. C.	F.	17	About 17 years. Average, 10 fits a week.	Seven. Much improved after each.	May, June, July, Aug. and Nov., 1896.	Much improved. Has on the average one fit in 3 months.	This patient (according to her mother's statement) had 100 fits in the week before she came to me, and she now goes three months without a fit.
10.	J. H.	M.	25	About 5 years. Had 3 to 4 fits a week.	About ten.	January to April, 1896.	Improved. Fits less frequent.	Would insist on taking stimulants at intervals, and generally had a fit after doing so.
11.	H. C.	M.	25	6 years. Average, 3 fits a week.	About fourteen, and then became an in-patient for about a month.	November, 1895, to April, 1896.	Improved. Fits not so severe or frequent.	This patient (the son of a publican) would drink to excess at intervals; consequently became worse. Was taking medicine (bromides for a time).
12.	P. C.	M.	14	Some years. 8 to 10 fits a week.	Several.	June to Dec., 1896. Still under treatment.	Much improved. May recover.	Was very passionate and violent to his parents. Is now quite amiable, and has on the average one fit in 9 weeks.
13.	Dr. M.	M.	40	Some years. 4 fits a week.	About ten.	July and August, 1896.	Improved.	Gone back to America. Fits reduced to one in three weeks.
14.	J. R.	M.	36	Some years.	Two. Slight.	August, 1896.	Much improved.	Is working at the Army and Navy Stores. Says that he is keeping well.

TABLE X.—CHOREA.

No.	Name.	Sex.	Age.	Duration of Disease before Hypnozes.	No. of Hypnozes.	Date.	Result.	Remarks.
1.	A. N.	F.	11	9 months under treatment at a Dispensary.	Four, with gradual improvement after each.	Jan. and Feb., 1893.	Recovery.	Choreic movements of face and body generally.
2.	B. L.	F.	18	4 months under medical treatment.	Four. Movements of leg ceased after first.	July.	Recovery.	Sent by Dr. SUTHERLAND, Bruton Street. Right hemichorea; dropped things when she tried to hold them.
3.	M. E. B.	F.	19	Was under treatment 9 months.	Three. Improved after first hypnosis.	April and May, 1894.	Recovery.	Sent by Dr. BAYDON, of Sydenham. Movements general, could only walk with difficulty.
4.	A. B.	F.	14	Was under treatment 4 months at St. Bartholomew's Hospital.	Three. Great improvement after third, relapsed a week afterwards.	April 18th, 1896, to Jan., 1896.	Had two relapses. Now recovered.	Had extensive movements of the body generally.
5.	M. R.	F.	17	12 months under treatment. University College Hospital.	Three. Gradual improvement.	May.	Recovery.	Choreic movements of hands and chiefly of body. Case shown before Hunterian Society, Jan., 1896.
6.	E. G.	F.	13	Some months under treatment at the London Hospital.	Several. But was not easily hypnotised.	June and July.	Recovery.	Case sent by Dr. F. J. SMYTH. Choreic movements chiefly of face.
7.	R. P.	M.	14	Was treated for some months as an out-patient at the London Hospital and an in-patient for 3 months.	Several. Taken as an in-patient for 10 days.	July till beginning of Dec.	Recovery.	Sent by Dr. F. J. SMYTH. Supposed to be a chronic case. General choreic movements, walked with difficulty, dribbled, vacant expression, appeared idiotic.
8.	B. W.	F.	15	Was treated in May at St. Bartholomew's Hospital. Got well and relapsed.	Three, with marked improvement after each.	July.	Recovery.	General movements of limbs. Case shown before Hunterian Society, Jan., 1896.
9.	O. L.	M.	8	Second attack, which has lasted 4 weeks.	Four. With gradual improvement after each.	Oct. and Nov.	Apparently recovered.	Had general choreic movements.
10.	E. D.	F.	13	Ill about 4 weeks.	One. Appeared well after.	November.	Recovery.	Right hemichorea. Unable to hold anything for many seconds.

11.	M. W.	F.	84	Under treatment 14 months at Children's Hospital, Hackney. In-patient for 1 month. Had large doses of arsenic.	Five. A great improvement after first.	January, 1896.	Recovery.	Sent by Dr. Brown, of the Children's Hospital. Left hemichorea; had to be supported when walking; could not lift her hand from her side. Case shown before Hunterian Society, Jan., 1896.
12.	F. B.	F.	8	About 8 months.	Five, with slight improvement after the third.	Jan. and Feb., 1896.	Improved slightly.	Mother would not bring the child often enough for treatment.
13.	K. P.	F.	12	About 6 months.	Six. Improvement gradual after each.	March and April, 1896.	Recovered.	Second attack. First lasted about eight months.
14.	E. J.	F.	17	18 months, under treatment nearly all the time.	Nine, but was not easily hypnotised.	Jan., Feb., March, 1896.	Recovered.	Case sent by Dr. Howard, of Clapham. After she had resisted all treatment by medicine.
15.	H. E. F.	F.	18	4 years, with intervals of apparent improvement.	Four, with gradual improvement.	June, 1896.	Apparently recovered.	Sent by Dr. F. J. Skirving, London Hospital. Choreic movements of arms, legs and body.
16.	G. T.	F.	13	3 months under treatment.	Three, with marked improvement after each.	January, 1896.	Recovered.	Movements of face chiefly.
17.	H. C.	F.	17	8 years under treatment in the country and London.	Several, but not very deep.	April to Dec. 1896. January, 1897.	Some improvement as regards noise, but movements not much less.	Was under the care of Dr. FERNIER, at the National Hospital. When I first treated her she used to bark like a dog; this symptom has almost disappeared. She is able to go out every week.
18.	M. A. B.	F.	11	About 9 months under treatment.	Several. Was taken as an in-patient.	April to beginning of June, 1896.	Recovered.	Sent by Dr. CONWAY, Mile End. Choreic movements of face and legs.
19.	C.	F.	10	About 8 years.			Very little improved, but movements weaker.	Sent by Dr. ARTHUR DAVIES. Movements chiefly of left arm.
20.	D. L.	F.	11	8 months, under medical treatment nearly all the time.	Eight, with gradual improvement after each.	December, 1896. January, 1897.	Much improved; still under treatment. Can walk alone, speak and write fairly.	Was in a very weak condition, and unable to speak or walk.
21.	M. C.	F.	16	2 weeks. Under treatment 1 week.	One. Movements ceased after ten minutes' sleep.	January, 1897.	Recovery.	Movements chiefly of face and left arm.

TABLE XI.—INSOMNIA.

Name.	Sex.	Age.	Duration of case before treatment.	No. of Hypnoses.	Date.	Result.	Remarks.
Miss T.	F.	35	Some years.	Suggestion with hypnosis. Seen three times.	July, 1895.	Recovery.	Was very depressed.
Lady G. G.	F.	37	Some years.	Suggestion with hypnosis. Seen four times.	January, 1897.	Recovery.	Had dyspepsia also.
Mr. G.	M.	38	Some years.	Suggestion with hypnosis. Seen six times.	August, 1896.	Recovery.	Suffered from debility.
Mrs. E.	F.	70	Some years.	Suggestion with hypnosis. Seen three times.	May and October, 1896.	Much better.	Was somewhat hypochondriacal.
LOCOMOTOR ATAXY.							
Mr. D.	M.	46	About 10 years.	Suggestion with hypnosis. Seen six times.	April, May, and October, 1896.	Improved.	Pain from legs disappeared and patient could walk without his stick; he also had more control over his sphincters; otherwise no change.
Mrs. A.	F.	35	Some years.	Suggestion with hypnosis. Seen about thirteen times.	March to August, 1895.	Improved.	Pains from legs and knees disappeared, and her health generally improved, so that she could walk; otherwise no change.
WRITER'S CRAMP.							
Miss W.	F.	28	Some months.	Suggestion with manipulation. Seen once.	June, 1894.	Recovery.	All pain disappeared, and patient has had no cramp since.
Mr. W.	M.	36	Some months.	Suggestion with hypnosis. Seen several times.	April to August, 1895. January, 1897.	Much improved.	Has had very little pain lately, and is following his occupation.
Mr. E.	M.	40	About 2 years.	Suggestion with slight hypnosis. Seen about nine times.	July, Aug., and October, 1896.	Improved slightly.	Sent by Dr. HARPER, of Finchley. Patient to have more treatment shortly.

TABLE XII.—TORTICOLLIS (SPASMODICA).

Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnoes.	Date.	Result.	Remarks.
R. J.	M.	48	18 months.	Suggestions only. Seen three times.	August, 1894.	Much improved.	Sent by Dr. F. J. Sarraz, London Hospital.
Mrs. N. F.	F.	46	Some years.	Suggestions and hypnosis.	May to August, 1896.	Much improved for a time. Had a slight relapse.	
Mrs. W. F.	F.	60	2 years.	Suggestions and manipulation.	July, 1896, to present time.	Is now fairly well. Improved.	Dr. Ferrier sent this case to me. Patient is much better at intervals.
Mrs. C. F. R.	F.	55	6 years.	Suggestion, with slight hypnosis. Seen three times.	January, 1896.	No perceptible improvement.	

MASTURBATION.

Mr. Mc. K.	M.	21	Some years.	Suggestion with hypnosis. Seen six times.	August, 1896.	Much improved.	
Miss K. F.	F.	22	Some years.	Suggestion with hypnosis. Seen six times.	Aug. and Oct., 1896.	Much improved for a time.	

PIANIST'S CRAMP.

Miss O. F.	F.	24	5 years.	Suggestion, with and without hypnosis. Seen six times.	Nov. and Dec., 1896. January, 1897.	Apparently recovered.	Right wrist was affected, and patient could not play for more than half-an-hour. Can now practise four hours a day without inconvenience.
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HYSTERIA.

Miss P. F.	F.	20	Some years.	Suggestion only. Seen fifteen times.	March, April, and October, 1896.	Improved.	Very passionate and inclined to break things. Last report, good.
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HICCOUGH.

M. S. F.	F.	22	5 days.	Suggestion with hypnosis. Seen once.	February, 1896.	Recovery.	Was sent for by Drs. Appleford and Elkington. All the usual remedies had been tried. Hicough stopped after five minutes' treatment.
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DELIRIUM TREMENS.

A. B. M.	M.	42	4 days.	Suggestions for sleep and against drink with hypnosis. Seen once.	February, 1894.	Recovery.	Sent for by Dr. Long. Patient was in excited state; saw visions, and was being held on bed. Hypnotised in 15 minutes, and suggestions given. Slept 22 hours, lost his craving for drink, and was an abstainer for six months.
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TABLE XIII.—MISCELLANEOUS CASES.—RHEUMATISM.

Name.	Sex.	Age.	Duration of Disease before Treatment.	No. of Hypnoses.	Date.	Result.	Remarks.
Mr. B.	M.	21	4 months.	Suggestion and manipulation. Seen once.	October, 1896.	Recovery.	Had rheumatic pains in all joints.
NOCTURNAL INCONTINENCE.							
A. S. M.	F.	25	4 months.	Suggestion with hypnosis twice.	March and April, 1894.	Recovery.	Relapsed after first hypnosis, but has kept well since second.
Miss R.	F.	17	Some months.	Suggestion with slight hypnosis. Seen twice.	November, 1896.	Not improved.	This patient is still under treatment.
STUPOR.							
H. S.	M.	40	Some years.	Suggestion with hypnosis. Seen three times.	May, 1896.	Recovery.	This patient would sleep 20 out of 24 hours, and could not be awakened. Is all right now.
PAIN FROM CHRONIC DISEASE AND THICKENING OF RIGHT ANKLE.							
Mr. C.	M.	40	Some years.	Suggestion with and without hypnosis. Seen about twelve times.	June to Dec., 1896.	Much improved for a time.	This patient improved and relapsed. Then improved again. Was very nervous.
TITCHINGS OF LEFT SIDE OF FACE.							
Miss N.	F.	33	4 years.	Suggestion with and without hypnosis. Seen six times.	Oct. and Nov., 1896. March, 1896.	Very little improvement.	Sent by Dr. St. OLAIR, Shadwell.
TREMOR OF THE RIGHT LEG AND PAIN.							
S. K.	F.	23	Several months.	Suggestions and manipulation. Seen several times.	March and April, 1896.	Much improved. Rides a bicycle.	Tremor stopped after third treatment, and patient could walk. Sent by Dr. FERRIER, from National Hospital.
ACUTE PAIN IN LUMBAR REGION AND UNABLE TO WALK.							
Mrs. D.	F.	46	Some months.	Suggestions and manipulation.	May to August, 1896.	Much improved. Walks without a stick, and has little pain.	Sent by Dr. FERRIER, from King's College Hospital.

*Medical Reticence.** By CHARLES MERCIER, M.B. London.

It is more than half a year since I gave notice that I should draw the attention of this Association to the question of Medical Secrecy, and invite the Association to give an expression of opinion upon it. On the first occasion the subject was postponed at the request of the President, and on the second, at the Annual Meeting, I was unfortunately prevented by urgent business from being present.

This delay in bringing the subject forward is not altogether to be regretted. It will be remembered that early in the year the question of the sacredness of the secrets revealed to medical men formed the basis of a celebrated trial, and that this question aroused so great an interest that not for very many years has any matter connected with our profession so deeply stirred the hearts of men. The country, from one end to the other, rang with reports and comments on the trial; the correspondence in the *Times* relating to it extended over weeks; and it is therefore not wholly disadvantageous that we now approach the subject when angry feeling and impatience have subsided, and a calmer and more judicial consideration can be given to the matter.

It is a very noteworthy fact that at the time when public attention was given so largely to this subject; a time when men's thoughts ran so strongly upon it, that not only the professional, but the lay Press was full of it; when it displaced the weather as the introductory topic of conversation at social meetings; when the amount of the damages, said to have been the largest ever given in a case of libel, was a nine days' wonder; when the interest in the subject was so strong and so universal the natural reserve of Englishmen was broken down, and strangers in trains and omnibuses opened their hearts to one another on the matter—it is a noteworthy fact, and a fact whose significance I will not attempt to explain, that at such a time of universal and enthralling concern the medical profession itself was absolutely silent. For weeks the eyes not only of the medical profession itself, but of the whole of the educated English world, were directed to Pall Mall, in anxious expectation of a decisive deliverance by that ancient, dignified, and noble corporation which has for many generations upheld the

* Read at the General Meeting, held in London, 19th Nov., 1896. Discussion postponed until next Annual Meeting.

standard of purity and uprightness in medical life. But the College of Physicians made no sign. From the College of Surgeons no one expects a pronouncement on a matter of ethics, and therefore at the silence of the College of Surgeons no one was disappointed. But there is another body, a great and popular body, wanting, indeed, the dignity of these ancient corporations, but representing far more fully the opinions and aspirations of the medical profession at large, from which an opinion might have been confidently expected. But neither the British Medical Association itself, nor any of its numerous branches, have referred to the matter in any way, as far as I have been able to discover; and even the Ethical Section contrived, with what difficulty I know not, to pass it by.

Seeing that the subject has been treated by the medical profession with what appears to be a conspiracy of silence, it argues some temerity for a private member to bring the matter forward in a comparatively small Association like our own; but there are reasons which make this subject more important to our branch of the profession than to any other, and which render more desirable to us than to any of our professional brethren some clear principle of guidance with regard to it.

There are reasons why the subject of Medical Secrecy is more important to us, as alienists, than to any of our professional brethren. In the first place, to none of our professional brethren are secrets so important habitually confided. They have to deal with questions of life and death only. We have to deal with questions of sanity and insanity; and who will say that these are not more important? In the second place, the revelation to a third person of information gained by examination of a patient is a matter which seldom comes up for the consideration of the general practitioner, the physician, or the surgeon; but to us, dealing as we do with insane patients, it is a matter of daily and hourly necessity. They rarely have to consider it, and when they do, they have special circumstances to guide them, and, as a rule, ample time in which to form their decision. We have to decide the matter constantly, and upon the spur of the moment. We have often no time for consideration. Under these circumstances, it will, I think, be conceded that, to us, the importance of the subject of medical secrecy is greater than to any other medical practitioners, and that we are in more urgent need of some clear rule of guidance.

I trust that it is no evidence of a vainglorious spirit if I point out that, despised and detested as is our branch of the profession by prejudiced persons; subject, as we are, to the crazy accusations of both present and former patients; butts, as we are, for the litigious propensities of vindictive and imperfectly recovered lunatics,—this particular fault has never been laid to our charge. We have never been accused of unduly or unnecessarily revealing the secrets of our patients.

To show how delicate is our position in comparison with that of others of our profession, let me remind you that while medical men practising in other departments may, indeed, do infinite harm by revealing confidences gained in the consulting-room, none of them can, as we may, attach a stigma to a man, and perhaps bring about his ruin, by revealing the bare fact that he has consulted us at all.

In seeking for a rule as to the circumstances in which medical secrecy is to be observed, we shall have little difficulty as to method. Our method must be first to lay down the law, and then to formulate the exceptions to the law. The first part of the task is easy. The general rule, that professional secrets are sacred and inviolable, is obvious and is imperious. Among medical men it is neither questioned nor doubted. But as there has unhappily been an impression abroad that it is not always looked upon as *primâ facie* the rule of conduct, it may be well to give the reasons, or some of the chief reasons, why it is so regarded.

The duty of the medical practitioner is to treat, with a view of ameliorating the condition of his patient. Treatment cannot be, I will not say successful, for in that it often fails, but it cannot be adapted to the malady unless knowledge is complete. Only when our inquiries are unrestricted and our means of obtaining knowledge unfettered, can we gain such an insight into the nature of a malady as will justify us in determining on its treatment. For this reason we demand from our patients unlimited candour. This principle, we hold, justifies us in disregarding the pride of men and the natural modesty of women. We demand from them answers to our most searching questions on their most private and delicate affairs. We require them to put themselves into unseemly postures, and to submit to humiliating manipulations; and our demands and requirements are unreservedly conceded. But they are conceded, assuredly, upon the implied understanding that so great a concession

carries with it a corresponding obligation ; and that obligation is the obligation of secrecy.

Let us put ourselves into the position of our patient. It is not difficult, for we have most of us filled that complimentary rôle at one time or another of our lives. We go to a doctor and ask his aid. His reply is a demand. He says to us, "Strip! Expose yourself in all the nakedness of your body; exhibit your deformity; lay bare your bruises, your wounds, and your sores, and let me handle them, probe them, cauterise them as I think fit; recount to me your sins, your vices, and your follies; that which you have never confessed to your bosom friend, your priest, or your God, confess now, here, to me. Abase yourself, if need be, to the very dust; for unless you do all this, I cannot and will not attempt to relieve you." When such demands are made upon us, do we not by our very compliance, by our very obedience make this reply? "This, since to get relief I must do it, I will do; but I do it on the understanding that your sacred honour is pledged, that these revelations that I make to you, are made to you alone. They are made that I may have relief from my suffering, and are to be used for no other purpose."

It is unnecessary, I think, to seek for further sanction for the law of secrecy. Did we need it we might find it in the difficulties that we now have in getting full and candid information upon many points, and in the raising of these difficulties to the height of impossibility if the safeguard of secrecy were not considered absolute. Hence upon this rule rests the very foundation of our art, the relief of human suffering.

But though no further sanction is needed for the establishment of the rule, there are considerations which tend to corroborate and extend it, and of these it may be well to remind you. In these latter days medical men have become lay confessors. The consulting-room has taken the position of the confessional, as the place where all hearts are open, and no secrets are hid. To us the business man confides the tale of his insolvency, as yet unknown to the world. To us the girl who ought to be a maid, but is not, confides her shame. To us the wife confides the unfaithfulness of her husband; the husband the intemperance of his wife. We scarcely sufficiently appreciate the intense craving that exists in the human breast, especially the female breast, to confide its sorrows to some sympathetic bosom. It is one

of the most universal motives that sway human conduct. We are all familiar with the exhortation:—"Give sorrow words, the grief that does not speak whispers the o'er fraught heart, and bids it break," but perhaps we do not always realise the force and universal truth of the statement it contains. "Man," says the apostle, "was not made to live alone," and like most of the aphorisms applied to man, this is especially and pre-eminently true of woman. Woman's mental nature is not rigid enough to stand alone. She must have some one to lean on, and above all, some one to confide in. Whether it is the agony of steadily advancing shame which overwhelms the life of her who is neither maid nor wife; or whether it is the misery produced by a refractory and perhaps intemperate cook; a woman must confide her trouble to some one. Alone she cannot bear it. Doubtless her natural prop, stay, and confidant is her husband; but unfortunately, or fortunately, all women are not the possessors of that convenience; and many of those who are, do not meet from him with that sympathy in their troubles which is a necessity of their natures. A woman can no more help disburdening herself of her troubles, than she can help bringing her child into the world when her time is fulfilled; and hence a confessor of some sort she must have. Especially do the procumbent natures with which we so often have to deal, which can no more stand alone than the bindweed or the creeping jenny, especially do they demand a moral support external to themselves. Some of them find the necessary support in the parson; some invoke the costly aid of the family solicitor; but in the great majority of cases the doctor is the trellis upon which these natures cling; and it is, I maintain, an unjustifiable threat to hold over these poor flexible characters, to tell them, as they have been told, that the doctor may proclaim their secrets to the world if he in his discretion considers it advisable in the interests of his wife and children to do so.

For this is what the evidence amounts to that was given in the case to which I have referred. In that case, the broad rule was laid down in terms as strong as those that I have used. Sir John Williams said, "As a general rule medical men should hold inviolate professional confidence;" and Sir W. Broadbent said, "The rule is a very strong unwritten law that no confidence made to a medical man should be divulged." Having laid down the rule in un-

compromising terms, these two eminent members of our profession then stated the circumstances which in their opinion justified a departure from it, and it is to these circumstances that I wish to direct your attention; it is upon them that I wish to obtain your opinion.

"The exceptions," said Sir John Williams, "are when there are higher claims." "Who is the judge?" interjected Mr. Justice Hawkins, very pertinently. "Such," continued the witness, "as a court of justice. With regard to crime, a medical man is obliged to inform the public prosecutor of any crime which is committed, or is intended to be committed. The higher duty and claim that a man's wife and children have upon him justify him in taking every measure to protect them." "The secret," he said, in answer to a direct question, "is the secret of the patient, not of the doctor, but," he went on to say, "the medical man is and must be the sole judge of the circumstances under which the secret may be published to the world."

Sir William Broadbent's evidence is to the same effect. When asked what exceptions to the rule of secrecy he would recognise, he said, "We are compelled to divulge confidences in a court of law, and sometimes to prevent crimes. There are also certain circumstances where, under a strong sense of duty, it might be necessary to divulge professional secrets." "Do you recognise," counsel asked, "the exceptions made by Sir John Williams in favour of wife and family?" "I think so," the witness answered, "if it is clearly necessary. It is conceivable that it might be necessary to divulge secrets for their protection. It is difficult to formulate an abstract opinion. It should only be made in the last resort. If the object can be accomplished in any way short of divulging a secret, it ought to be done in that way."

Sir William Broadbent is, it appears, more reluctant to admit the exception than is Sir John Williams, and tries as far as possible to minimise it; but he does in fact admit it, and practically admits it as fully as the other witness.

It will be noticed that these two witnesses are in entire agreement as to the exceptions to the rule of secrecy, that are admissible and justifiable. These exceptions as given by them are four in number, and I now propose to examine them seriatim. Other exceptions have been alleged elsewhere, and these I will mention subsequently.

The first exception is as to giving evidence in a court of

justice. Both the witnesses stated categorically that in their opinion medical men were bound to reveal professional secrets if called upon in a court of justice to do so. Neither of them appeared to have any doubt upon the matter. They spoke of it as if it were self-evidently a matter of course and of necessity. But is it a matter of course? We are all familiar with the extremely wide license that is allowed to counsel in cross-examination, and we are familiar with the fact that in doing what they conceive to be their duty to their clients, some counsel have little scruple as to the means they employ to discredit a witness. Is a medical man bound, merely because the question is put to him by a violent and unscrupulous partisan in a court of justice, to reveal some discreditable fact that he has learnt from a patient in the secrecy of the medical confessional? It does not seem to me self-evident that he ought to answer such a question. It appears at least arguable. I should have thought that if a witness under such circumstances desired to retain his self-respect and uphold the honour of his profession, he might very well refuse to answer, and prepare himself to take the consequences. Doubtless martyrdom is an unprofitable occupation. It is worse; it is unfashionable. But it seems to me that even in this age of crapulence and money-grubbing there still are circumstances in which a man is bound to act according to his conscience, even if in doing so he incurs the terrors of the law. But there is this encouragement for those who desire to take the bold course, but shrink from its consequences, that there is no certitude that the law would resent their action. The medical witnesses whom I have quoted appear to be more impressed with the majesty of the law than even those who have to administer it. Mr. Justice Hawkins, in summing up in this very case, said that, as to giving evidence in a court of law, "he did not altogether agree with what the medical witnesses said as to that. It all depended on the judge. The judge might refuse to commit a medical man for contempt in refusing to reveal confidences. Each case would be governed by the particular circumstances, and the ruling of the judge would be the test." After this dictum the assumption that medical men are of necessity bound to answer any questions that may be put to them in a court of justice falls to the ground, and the first exception to the rule of secrecy is wiped out.

The second exception claimed was that of revealing the

fact of a crime having been committed. Both of the witnesses appeared to think that on such a fact coming to his knowledge a medical man was bound to break the rule of secrecy. But here again they took a more stringent view of their obligation to the law than the representative of the law himself. "Suppose," said Mr. Justice Hawkins, "a medical man were called to attend a woman, and in the course of his professional attendance he discovers that she has attempted to procure an abortion. That being a crime under the law, would it be his duty to go and tell the Public Prosecutor?" "The last legal opinion upon that question obtained by the College of Physicians," said Sir John Williams, "was yes." "Then all I can say," said the judge, "is that it will make me very chary in the selection of my medical man." His want of sympathy with this strict view of the duty of a medical man was more plainly stated in his summing up. "If," he said, "the doctor were called in merely to attend a woman needing physical aid, his lordship doubted very much whether he would be justified in going to the police and saying 'I have been attending a poor woman who has been trying to procure an abortion.' That would be a monstrous cruelty. Therefore, to say there was a general rule was going too far. There were no doubt cases in which it was obvious that a doctor should inform." It would have been interesting if the learned judge had instanced such a case. For my part I do not conceive that it is any part of the duty of the medical profession to transform itself into an auxiliary detective force; and although cases may and do, not rarely, occur in which medical men have to communicate to the police their suspicions that crime has been committed, yet that they should use against a patient for this purpose information gained under the seal of the medical confessional is, I will venture to say, neither usual nor desirable. I cannot admit, and I ask this Association to refuse to admit, that in this case either we are called upon to make an exception to the general rule of medical reticence.

The third exception that was claimed by the two witnesses to whose evidence we are indebted for the semi-official view of the subject, was the one upon which the result of the trial depended. Said Sir J. Williams: "The higher duty and claim that a man's wife and children have upon him justify him in taking every measure" (*i.e.*, in revealing professional secrets) "in order to protect them. He is not bound to consult his patient first, though the secret is the

patient's secret, not his own. He (the doctor) is and must be the sole judge of the circumstances under which the secret may be published to the world." With this doctrine Sir W. Broadbent generally agreed, though he appeared to agree reluctantly, and sought to narrow the effect of his admission. The admission is at first sight a startling one, and several questions immediately arise upon it. The first and most obvious question is, "Does the other party to the contract know of this clause? We have seen, and it will not, I think, be gainsaid, that medical secrets are imparted by the patient on the implied understanding that they are to be utilised for his benefit only. Does he understand, when fulfilling his part of the contract, and laying bare his very soul to his doctor, that the latter pledges his faith to secrecy with a mental reservation?—with the reservation that if it is to the interest of his own wife and children—that is to say to his own interest, he may reveal the secret? Of what value is a pledge given with such a reservation? Mr. Justice Hawkins viewed this doctrine with a leniency which I am unable to understand. He said that it required a great deal of limitation, but did not deny that, within limits, the exception was valid. He did not instance a case in which the exception would be valid, and I have tried, and tried in vain, to imagine one in which the course suggested would be justifiable. To me it appears that the admission of this exception would be so one-sided as to vitiate the contract altogether. It would be a palpable and manifest breach of trust. What would the learned judge say to a trustee who undertook to refrain from committing a breach of trust so long as the higher duty and claim that his wife and children had upon him did not interfere with his duty to the *cestui qui* trust? What would he say of a trustee who maintained that he himself was, and must be, the sole judge of the circumstances under which he would be justified in committing the breach?

Again, if this exception be admitted, how far does it extend? To wife and children say the witnesses. Does it then extend to step-children? On the question being put it was admitted that it does not extend to a sister; but may it not include a parent, or a grand-child? Who is to establish the limitation? Is this also to be a matter in which the medical man is, and must be, the sole judge? If it extends to wife and children, or to parents and grand-children, and not to brothers and sisters, on what principle is it so limited? What is the authority? Was such an ex-

ception ever heard of or thought of before this particular case, in which the interests of wife and children happened to be involved, came into court? I ask you, gentlemen, to repudiate this exception, and to say that it has no foundation either in principle or in practice.

The fourth exception that was adduced in court was the prevention of an impending crime. When a medical man becomes aware that a crime is intended, may he break through the rule of secrecy in order to prevent that crime being committed? So stated, it would seem that there could be but one answer to that question. If there are any higher duties and claims to which a medical man owes allegiance, higher, that is, than his duty to his patient, such duties and claims are surely not those of his own wife and family, but those of the community of which he is a part, the claims of justice, of order, and of law. Such a case, a case in which the plain duty to the individual patient is incompatible with the plain duty to those principles of morality upon which all society and all civilisation depend, is indeed a difficult one, and one in which we should have been thankful for a clear principle of guidance, either from our own leaders or from the learned judge, who did indeed touch upon the question. The eminent physicians whose evidence has been so often referred to, assumed that under the circumstances supposed, there was but one course open to the doctor. He must, of course, give his patient away. We have seen so much reason to doubt the soundness of their views in other cases that we must be pardoned for declining to accept them in this without some consideration. We turn then to the opinion of the judge with high anticipation, but here we meet with disappointment. Mr. Justice Hawkins put the case in which it came to a doctor's knowledge that a crime was intended to be committed, and then gave as an illustration a case in which a crime had in fact been committed, and his remarks upon it, which have been already given, applied to the latter case, and not to the former. So that we are completely without judicial guidance in this matter, and must depend upon our own judgment. Fortunately, the case is not really so difficult as it seems. For all practical purposes, the instances in which a medical man obtains from the confidence of his patient the knowledge that a crime is contemplated, are limited to one particular case of crime. They are limited to the case in which he is requested to procure an abortion. And in this case the decision gives us no difficulty, for the

practice is already settled. What medical man in such a case—and such cases are common enough—ever thinks of informing the police? Doubtless there are other circumstances in which a medical man obtains, in his medical capacity, knowledge, or suspicion that a crime is contemplated, or is in course of being committed—cases of poisoning for instance—but in such cases he gains the knowledge from no confidence placed in him by the criminal, and is therefore under no sort of obligation to refrain from exposing him. So that for all practical purposes this case, of the discovery of a contemplated crime, does not affect the rule of medical secrecy at all, and, along with the other alleged exceptions, vanishes when it is seriously investigated.

Fifthly, there is a group of cases which were not referred to by our expert witnesses, but were brought forward subsequently in the Press as crucial instances showing that the rule of medical secrecy must in certain cases be broken. They are cases in which the malady of the patient involves danger to the community. Such is the case of a milkman who suffered from an active stage of syphilis; the milkman who was desquamating after scarlet fever, and still following his trade; a signalman who suffered from heart disease, and was liable at any moment to die suddenly on duty in his solitary box. All these cases, and many others, were related in the papers, the moral drawn from them being that their circumstances rendered a departure from the rule of secrecy justifiable and necessary. The hardest case of all is one which has not, I think, actually occurred, but which might occur—that of a man suffering from syphilis consulting a doctor to whose daughter he is engaged. Now, in not one of these cases, and I have gone carefully through them all, was the revelation of the secret necessary for the prevention of the mischief. In all of them the end could be compassed in other ways, and in those which were related as having actually occurred, the majority had actually been effectually dealt with in ways which did not involve the divulging of the professional secret. These cases are sometimes discussed as if the revelation of the secret to the medical man were itself the origin of the evil, and therefore imposed upon him the duty of preventing it. But it is obvious that this is not the case. The evil exists before the communication is made, and will continue to exist whether the communication is made or no. The revelation to the doctor does not in any degree alter the pendency of the evil.

Then there is a group of cases in which the medical man owes a divided allegiance; cases in which he is employed by one person to attend another, and owes a duty both to his patient and to his employer. Such cases do, no doubt, often present difficulties, but even in them the duty to the patient should surely be the first and paramount consideration.

No doubt in such cases as I have instanced the temptation is great to break the rule in order to arrest an evil that is in progress, or to prevent an evil that we see to be imminent; but it cannot be too often or too strongly insisted that "Hard cases make bad law." That is to say, the relaxation of a general rule to meet the hardship of a particular case, is productive, in the long run, of more evil than it prevents. "Make a hole through a principle to admit a solitary exception, and, on one pretence or another, exceptions will by-and-bye be thrust through after it, so as to render the principle utterly good for nothing."

I therefore submit that in all his dealings with sane patients the medical man should be guided by the maxims laid down by the eloquent son of Sirach, with a force and directness which I cannot hope to rival, and which come down to us with the accumulated sanction of five-and-twenty centuries of unquestioned acceptance.

"Rehearse not unto another that which is told unto thee; and thou shalt fare never the worse.

"If thou hast heard a word, let it die with thee; and be steadfast, it will not burst thee.

"Whoso discovereth secrets loseth credit; and shall never find friend to his mind.

"Love thy friend, and be faithful unto him; but if thou bewrayest his secrets, follow no more after him.

"For as a man hath destroyed his enemy, so hast thou lost the love of thy neighbour.

"As one that letteth a bird go out of his hand, so hast thou let thy neighbour go; thou shalt not get him again.

"Follow after him no more, for he is too far off; he is as a roe escaped out of the snare.

"As for a wound, it may be bound up, and after reviling there may be reconciliation; but he that bewrayeth secrets is without hope."

The conclusion to which I come is therefore that a medical man is not under any circumstances justified in revealing the confidence of a sane patient without the

patient's consent, and this conclusion I embody in the following resolution:—

“That, in the opinion of this Association, information afforded by a sane patient, for the better understanding or treatment of his malady, to a medical man, is sacred, and ought not to be revealed without the consent of the patient.”

Three observations fall to be made here:

First; the terms of the resolution include facts ascertained by examination of the patient as well as verbal communications made by him.

Second; the resolution is so worded as to include those confidences only which the patient makes in his capacity of patient. Happily, patients are often personal friends of their doctors, and communications made in their capacity of friends come under other rules and need not be dealt with here.

Third; the obligation of secrecy does not obtain in those cases which arise, for instance, under the Notification of Disease Act, in which the patient is fully aware *beforehand* of the obligation of the medical man to disclose certain information; an obligation to which he, the patient, must be taken to have given his consent by his representatives in Parliament.

It will be noticed that there is introduced into the foregoing resolution a limitation of great importance. It refers to sane patients only. We are still without guidance in a matter which to the members of this Association is vital, viz.: the way in which the confidences of insane patients ought to be dealt with. This is a question which has not been touched upon at all in the extensive correspondence or the numerous leading articles to which the general subject has given rise. It is, however, a matter of great importance, and communications made by the insane cannot, it is clear, be dealt with under the same rule as applies to the confidences of the sane. Suppose, for example, an insane patient were to confide to us the fact that he had secreted in a certain place a weapon for the purpose of killing a certain person; we should certainly violate his confidence so far as to impound the weapon, and warn the intended victim; and it is clear that in this violation of confidence we should be ethically justified. Because, however, we are clearly justified in revealing some of the confidences of our insane patients, it by no means follows that we are justified in revealing all.

Suppose, for instance, in the course of our attendance upon an insane unmarried woman, she confesses the fact that before she became insane she had been delivered of a child. We should clearly not be justified in revealing the matter. Again, many of our patients lose all restraint and reticence, and blurt out family secrets of the most delicate and compromising character, smirching the good name of those who are nearest and dearest to them, without any appreciation of the importance of their revelations. Clearly in such cases we are, if possible, more stringently bound to observe secrecy than in the case of the confidence of sane people. It is as clear, therefore, that some rule is required with regard to information obtained from insane patients, as that the ordinary rule is here inapplicable.

It appears at first sight that it would be fair to apply the rule already laid down with regard to sane patients, to the sane utterances of the insane, and to allow the doctor to reveal the insane utterances at his discretion; but the instances already given show that such a rule would work injustice. The babbling of family secrets—of the dishonesty of a brother, or the unchastity of a sister—is clearly an insane utterance; and yet to it the rule of secrecy must be stringently applied.

There is, however, a guide, which appears to be a safe one, and which certainly has a very authoritative sanction. It cannot, I think, be far wrong to apply to the utterances of the lunatic a rule analogous to, and founded upon, that which has been laid down by the Legislature to govern the summary restraint of his person. To reveal a man's confidence is at least as great a trespass against him as to restrain his person; and the two injuries are so nearly alike in their gravity, that those circumstances which are held to justify the one may be held to justify the other; and we may conclude that "information obtained from an insane patient may be revealed when, and only when, it is expedient for the welfare of the patient, or for the public safety."

It is said that Dr. Guillotin was one of the earliest victims to be decapitated by the instrument to which he gave his name, and it is certain that Cardinal Balue was for years incarcerated in the iron cage which he himself built as an instrument of torture; both illustrating the still more ancient saying that he that diggeth a pit shall fall therein, and he that layeth a net shall be taken therein. I little thought when I took part in the construction of these Rules

that I should be the first to suffer under the guillotine of Rule 94. But, victim though I be, I will kiss the rod, and admit that even on this occasion the rule is a salutary and excellent one. It is not to be expected that members who now hear my resolutions for the first time can, upon the spur of the moment, decide whether or not they are the best possible to meet the case. The matters dealt with are complex and difficult, and require consideration; and the purpose of this paper will be well served if it evokes a discussion now; and prepares the minds of members of this Association to arrive at a definite conclusion, and to express that conclusion, as I shall certainly invite them to do, at a future meeting of the Association.

*Further Points in the Relation of Diabetes, including Glycosuria, to Insanity.** By C. HUBERT BOND, M.D., B.Sc., Assistant Medical Officer, London County Asylum, Banstead.

My paper to-day—entitled the Relation of Diabetes to Insanity—is practically a continuation of one which I had the privilege of reading before the Annual Meeting of the British Medical Association last year, and which subsequently appeared in the *Journal of Mental Science* last January.

I there recounted observations made upon the urines of 175 consecutive recent cases (males) of insanity, with a view to determining the frequency with which, and the class of case in which, glycosuria is met. A hundred and seventy-five is a comparatively small number on which to base any statistics, and, recognising this, I have, as far as time and opportunity permitted, continued similar observations during the past sixteen months. These have again almost entirely been restricted to the male sex. In my former paper it was stated that the 175 cases examined yielded 12 instances (6·85 per cent.) of either diabetes or glycosuria. To this dozen I added five other non-recent cases, four of whom were females, and whose existence was only accidentally discovered. These—in all—17 cases were then described in detail and certain deductions attempted. Since that time, and up to the 3rd of September of this year, 588 male patients have been admitted to Banstead Asylum. Of these

* Read at the General Meeting held in London on the 19th November, 1896.

266 were transfers from other asylums, and, although many were comparatively recent cases, that is they had only been certified within the previous few months, yet they were not entirely recent in the sense that I used the word in the former investigation, hence they have not been included in the table below. Of the remaining number 188 came under my care, and in each instance the urine was tested for sugar, using Fehling's solution, the day on, or day following, admission. Eight of these cases, however, were readmissions from the recoveries that had occurred among the previous set of 175 cases, and should, therefore, for statistical purposes, be deducted, my field of observation being thus reduced to 180 recent cases. In seven instances, or in 3.8 per cent. of these, sugar was proved to be present in the urine on admission. By combining my former results with these, 5.35 is shown to be the percentage whose urines contained sugar on admission.* Besides these seven instances among the recent cases I discovered four others among the transfers, and another, that of a man who had been in the asylum some 10 years. To these I can add another three, which were accidentally brought to light on the female side of the asylum by my colleagues, and to which my attention was kindly drawn. I am thus able to place before you a series of 32 cases of glycosuria or diabetes associated with insanity, no very great number perhaps, but surely sufficient to justify some inferences. I do not propose to weary you with a recital of the various details we have observed concerning these individual patients—time will not permit of it, nor do I think much advantage would accrue from so doing. The subsequent progress of the 17 already reported cases, and the details regarding the 15 others since collected, I have placed in the form of an appendix, which, if thought desirable, can be published in conjunction with this paper, in order to serve as a reference, as to the grounds upon which any conclusions put forth have been based. My present intention is rather to give you a summary of the observations I have been able to make upon the subject during the past nearly three years, in the hope that some here present may offer some suggestions whereby, in the future study of these cases, many of the doubts and difficulties which at present surround them, and about which one can only speculate, may be cleared up.

* Observations in a similar direction were made several years ago by Dr. Howship Dickinson. *Vide his Treatise on Diabetes*, Vol. i., p. 62, 1877.

Subjoined is a table indicating the varieties of mental disease under which the total 355 recent cases examined laboured, and the distribution among them of the several examples of glycosuria. It is really a double table, as it includes the original figures of a similar one inserted in my former paper, arranged side by side with those since obtained.

Form of Mental Disorder.	Number of Recent Cases in which the Urine was examined on Admission.			Number of Instances in which Sugar was Detected.		
	First Series of Cases.	Second Series of Cases.	Totals.	First Series.	Second Series.	Totals.
Congenital Cases ...	2	2	4	—	—	—
Epileptic Insanity ...	18	8	26	—	—	—
General Paralysis ...	30	32	62	3	—	3
Mania	43	39	82	—	—	—
Melancholia	55	59	114	6	5	11
Stupor	—	4	4	—	1	1
Delusional Insanity ...	5	7	12	—	1	1
Organic Dementia ...	6	12	18	2	—	2
Senile Insanity ...	16	17	33	1	—	1
Totals ...	175	180	355	12 6.85 %	7 3.8 %	19 5.35 %

A word, in passing, as to the accuracy of the above figures. As I mentioned last year, certain doubts have been cast in previous investigations as to whether the substance in the urine, reducing the copper solution, is or is not sugar. Such doubts appear to me to be very reasonable. Certain it is, that had I included every instance in which the copper solution was reduced, my percentage would be quite trebled. In my previous paper I relied on Roberts' fermentation test as the criterion; since then, when dealing with small quantities of sugar, the phenyl-hydrazine test*

* Put 5 cc. of urine in a test-tube, add "twice as much hydrochlorate of phenyl-hydrazine as will lie on the point of a knife-blade" (v. Jaksch), and one and a half times as much sodium acetate as is taken of the phenyl-hydrazine salt. Heat the test tube in a boiling-water bath for half an hour. Then cool at the tap and examine the yellow crystalline deposit under the microscope. [Extract from Stewart's *Manual of Physiology*, p. 370.] The urine should first be thoroughly precipitated with acetate of lead, and then filtered.

has been used in addition, and no case has been pronounced to be one of glycosuria until that test has been satisfied. I feel convinced, then, that these figures certainly do not over-estimate the proportion of saccharine urines, but am not at all so convinced that it is not understated. For scientific accuracy, the urine of each patient should be examined at repeated and short intervals; for in several of my cases the glycosuria is intermittent as well as remittent, and thus one's first and, possibly, sole examination of the urine might fall on a day when the sugar happened to be absent. This actually occurred to me in one instance where a case of glycosuria, reported last year, was discharged recovered from his mental symptoms, and subsequently relapsed and had to be readmitted. No sugar was detected in his urine on admission, and, had I not been familiar with his previous attack, the glycosuria would, in all probability, have been overlooked. I would here also venture to add a word of caution to others who may engage in a similar investigation. When using Fehling's solution, remember that, when only small amounts of sugar are present, the characteristic precipitate may not show itself until the boiling urine and solution has cooled. Also, attend to strict cleanliness of the specimen-glasses. When one is daily examining several saccharine urines, should the glasses containing them not be thoroughly cleansed at the time, the urine from a new admission may find its way into one, and fallaciously lead to the supposition of a fresh case of glycosuria. This latter caution may possibly be thought superfluous, but the accident has occurred, and when it does the ensuing waste of time in repeated examinations is very vexatious. Further, the number of cases examined must not be too small a one, if accurate results are aimed at; for the examples of glycosuria and diabetes that occur, do so not at all regularly. Thus, while 5.35 seems to be the percentage one may expect, it by no means follows that in every twenty admissions there will be one example of glycosuria. For instance, between the 18th of April and the 7th of August, there were 60 consecutive admissions whose urines were examined with negative results as regards sugar.

Since my last communication upon this subject, a new drug has been advocated by Dr. West in the treatment of diabetes, namely, the nitrate, or other salt of uranium.*

* *Vide Brit. Med. Journ.*, 1895, Vol. ii., p. 467.

Contrary to the host of other drugs that have been brought forward as specifics for this physician-baffling disease, this one does indeed seem to have a most powerful effect on the excretion of sugar. And several of the facts that I am able to lay before you to-day, as to any existing relationship between the output of sugar and the mental symptoms present in the cases of glycosuria and diabetes, that occur among our insane, are owing to the free use of uranium nitrate. It is not my intention to speculate here as to its mode of action, &c., but merely to mention broadly the results I have had with it, in so far as they concern our present subject. I cannot, however, help thinking that, when more is known as to its pharmacology, it will be found that we have at our disposal a drug, useful not only as a therapeutic, but also as a diagnostic agent. For it seems positive that there are certain cases of glycosuria upon which it has little or no effect; which fact would surely very possibly indicate a different pathology for this class of case.

In my previous paper I described the efforts we made with the aid of codeia and an anti-diabetic diet to control the excretion of sugar, in the hope that, should the mental symptoms of these diabetic cases be at all dependent upon the presence of sugar in the urine, we might thus alleviate or cure them. And I was able in one instance, at least, to chronicle distinct success in this direction. A like result, in a somewhat similar case, was reported in the July number of the *Journal of Mental Science* this year, from the Perth District Asylum. In other cases of glycosuria, where no anti-diabetic treatment was adopted, and where recovery still occurred, I was also able to point to a considerable degree of parallelism between the presence and amount of glycosuria, on the one hand, and the presence and acuteness of the mental symptoms on the other. But our efforts were never so successful as to completely control the excretion of sugar. Such a result, however, has been readily attained by the administration of uranium nitrate, and that without any necessity to alter the patients' dietary—a matter of no small import, both from a labour and economical point of view. So that, as far as my own cases are concerned, I am now able to speak more decisively upon the relationship in question.

As the result, then, of a consideration and an analysis of these 32 collected cases, it seems to me, that the instances of saccharine urines that are to be met with among

insane may be primarily divided into two chief classes:—*Firstly*, cases of true classical diabetes; and, *secondly*, cases of glycosuria, where sugar is detectable in the urine either (a) persistently, or (b) intermittently, but where there is neither thirst nor polyuria, and rarely, in fact, any other bodily symptom of diabetes. It is stated in Fagge and Pye-Smith's text book,* that to make a distinction between marked cases of diabetes, and those where the ordinary symptoms are absent, despite the persistent presence of sugar in the urine, is unsafe, and that fatal complications are not rare in slight cases. While admitting that there is no definite boundary line between the two categories, I think that this division is, at least, convenient for our present purpose, and is warranted by the diverse features of my 32 cases.

Taking the first group, I find that these true diabetic cases may again be subdivided into two sub-classes. The first embraces those instances where the disease shows itself, for the first time, during the course of the patient's mental trouble, and where in no way can it be said to be the cause of the insanity, though, of course, the converse is quite possible. These are comparatively unimportant. I have seven examples of this class (Cases XIII., XIV., XV., XVI., XVIII., XIX., and XX. in the Appendix). All but one of them were cases of dementia consecutive to mania, two of these being senile cases, the remaining case being one of chronic melancholia with much hypochondriasis. All but this last one were women, in four of whom the onset of mental disease was during the climacteric period, and the cause was largely due to alcoholic intemperance. Five were decidedly obese, three extremely so. In some it is possible there was a slight change in the mental symptoms, coincident with the development of diabetes, such, for instance, as the cessation of maniacal outbursts, and an increase of dementia or the development of new delusions. But controlling the output of sugar by means of uranium, seems to have little or no effect upon the mental symptoms of these patients, beyond soothing the distress caused by the irritative urine. One of the senile cases has a very occasional epileptic fit. She is the only epileptic that I have met with presenting either diabetes or glycosuria, and in her case the occurrence of fits is

* *Text Book of the Principles and Practice of Medicine*, Fagge and Pye-Smith, 3rd Ed., Vol. ii., p. 570.

certainly not of very long standing. In the second subclass of Group I. are included patients that have been known to have suffered from diabetes before any mental disease manifested itself. My 32 patients furnish three such instances, two men and one woman, the latter accidentally discovered (Cases XII., XXI., and XXII.). In these, I believe, the mental phenomena were actually caused by the diabetes. One case died too soon after the detection of the abnormal urine to allow of the administration of uranium; but under this drug one case has been entirely successful, and careful observation of him shows that as long as we can keep his urine free from sugar, so long is he mentally convalescent. His discharge is now being considered. "One swallow does not make spring," but surely this one case is sufficient to disprove the opinion of some, that there is no direct causal connection whatever between diabetes and insanity. The third patient (a woman) has only just come under treatment, and it is too early to speak of the result. The prevailing features in this class of case seem to be melancholia—an exaggeration of that frequently associated with non-insane diabetics—accompanied by delusions, these either of persecution, or visceral ones, the latter being possibly misinterpretations of real bodily discomfort attendant on the presence of diabetes. These cases, then, are rare, occurring in less than 1 per cent. of those examined, and their prognosis is by no means bad, if treatment is commenced soon enough. I have not as yet been able to come across a single good instance of diabetes, alternating with mental disease, but that such a phenomenon does occur is proved by the observations of others.

The second chief group consists of the remaining 22 cases of glycosuria. I prefer not to call them diabetes, for none have ever betrayed any persistent abnormal thirst, nor have they ever been found to be voiding any very undue amount of urine—at the most 80 ounces, and that only on occasions. Indeed, in one instance, distinct oliguria is seen. The sugar is excreted in varying amounts—from about 30 to 450 grains *per diem*, in my experience. After patient watching up to the time of death, where that has unhappily occurred, there has seemed no tendency for this amount to be exceeded. In certain instances this glycosuria is daily persistently present, except checked by uranium; in others it is only intermittently present, being absent for a day or so, or even for weeks or months. These 22 cases are of such a motley kind,

that I experience considerable difficulty in classifying them and conveying, in the form of a summary, any adequate picture of their prevailing features. First of all I may say, that of all the cases examined on admission, none showing distinct maniacal symptoms, and none of the epileptics showed any trace of sugar in the urine. The same fact in reference to the congenitally mentally enfeebled cases loses its importance owing to the paucity of their numbers, they being usually sent elsewhere. Three examples (Cases I., II., and III.) were furnished by the 62 general paralytics examined; but in these the sugar was in such mere traces and so very evanescent that they would appear to be of little import—in one instance the glycosuria seemed to have a direct connection with the “convulsive seizures,” and “cyanotic” glycosuria is well known after paroxysms of whooping-cough, asthma, and epilepsy. By far the majority of cases (namely, 10) were melancholics, and also those that have been classified as organic or senile dementers (4 and 1 respectively) presented some degree of melancholia. One is a case of true stupor (Case XXIII.), but it should be added that a distinct element of stupor is noticeable in at least two of the melancholics. One was a case of ordinary terminal dementia in a man of 55, following upon an attack of melancholia at the age of 28 (Case XVII.). The remaining two were good examples of monomania. One (Case XXXII.) has delusions of persecution and unseen agency, while the other (Case XXXI.) has grandiose notions of a religious nature. Two of the cases of organic dementia (XI. and XXIX.) presented well-marked remains of hemiplegic attacks. In the majority of instances there was a distinct history of alcoholic intemperance, and in several cases evidence of atheroma and vascular degeneration was apparent. Two (Cases XXVI. and XXVII.) suffered from most vivid aural hallucinations, the result of alcoholism; in the former of these, and in another of the alcoholic cases, there was in addition a history of recent plumbism. In two instances (Cases XXIV. and XXV.) there was very good reason for believing that the mental breakdown was due to recent head-injuries. In rather more than half of them there was either an insane heredity or they themselves showed distinct neurotic stigmata.

This group of glycosuria cases, though perhaps not the most conspicuous, is, to my mind, the most important and the most interesting. They would appear to occur in about

5 per cent. of the recent cases of insanity. Possibly this figure would be found to be rather less in the provincial asylums, as the London County Asylums are practically freed from congenital cases. [It would be interesting to know in this connection how many instances of glycosuria would be found in, say, a thousand presumably mentally and physically healthy persons, were their urines systematically examined.] Their explanation seems to me most difficult, yet could we but unravel it, it is possible the ætiology of diabetes in general would be much clearer. That the glycosuria is the cause of the mental symptoms is most unlikely; it is too small in amount. Also I have been able with uranium to entirely free the urine from it in several cases, and yet the patients have shown no mental improvement. In three cases, however, where no special treatment was adopted, and where recovery took place, I observed a cessation of the glycosuria coincident with the mental improvement. If it be that the mental disease is the cause of the glycosuria, there yet must surely be some other factor at work, for we are all of us perfectly familiar with numerous other cases exactly similar, both mentally and physically, but in whom there is no glycosuria. Dr. Pavy writes me that his experience leads him to look to the cortical matter of the brain as playing an important part in connection with glycosuria, and he believes the operation to be effected through the vaso-motor system. The post-mortem examinations that I have as yet had, while yielding numerous microscopic changes in the brain and other organs, have furnished none that we do not frequently meet with apart from glycosuria. But I am confident that there is here a field of useful work for those who have leisure or opportunity for a deeper research.

Appendix.

The following includes an account of the subsequent progress of twelve of the cases, reported in the January number of the *Journal of Mental Science*, 1896, illustrating the relation of Diabetes and Glycosuria to Insanity, and a description of fifteen others that have since come under the writer's notice.

Cases I., II., and III. were described before as atypical examples of general paralysis. The former two are dead, death occurring in each case ten months after admission, and after a sharp attack of diarrhoea. At the autopsies, the brains, which

were greatly wasted, showed in a most marked manner the characteristic lesions of the disease, notwithstanding the fact that the clinical course showed a departure from the usual type. The microscope revealed only the usual appearances seen in G.P., nor was their distribution unusual. The other organs were healthy, except the heart in Case II., which, while small (212 gms.), presented a distinctly stenosed mitral orifice. Case III. remains nearly unchanged. He has lost all affection for his family, is occasionally pugnacious, and is generally discontented. His delusions of persecution and aural hallucinations have, however, become more marked, but the physical signs remain as last recorded. No sugar has ever again been detected in the urines of these patients, though frequently searched for.

Case VI. was one of senile melancholia, with a considerable degree of amnesia. When last reported upon, it was stated that, despite the fact that the glycosuria had disappeared, the mental depression, although distinctly less, had not cleared off in the same parallel manner as had been observed in Cases IV. and V. However, it eventually did so, and his memory also so far improved that we were able to discharge him in four and a half months after admission. The glycosuria never reappeared.

Case VII. is still in the asylum. Here also the urine has remained free from sugar. He has become decidedly stout and is mentally worse, secondary dementia being now well advanced.

Case VIII., which was one of melancholia, with which there was a distinct element of stupor, considerably improved. The change for the better followed a vigorous course of thyroid-extract tabloids. He became brighter, can understand and answer questions, and has given up his habit of muttering to himself. The improvement, however, fell short of recovery, and, notwithstanding all our efforts, it is to be feared that terminal dementia is the goal towards which nature is aiming. The glycosuria, which is of the intermittent type, was unaffected by the change in the mental symptoms. However, under uranium nitrate it was entirely controlled, but unfortunately this was not accompanied by any further amelioration of the mental phenomena.

Case IX. was also one of melancholia, with which was combined, from time to time, some degree of stupor. The onset of dementia, which was feared at the time of last report, has now become much more evident. From the day of admission, in spite of all treatment, he has steadily retrogressed mentally, and he is now bodily weaker and thinner. The knee reflexes remain rather too brisk. The daily excretion of urine remains, as before, small, and it still daily gives a good sugar reaction. It was previously stated that, under a strict diet and the use of codeia, the daily output of glucose was considerably reduced, but it never fell below 130 grains. Under uranium nitrate, however, we were successful in completely freeing the urine from any trace of sugar. The drug was continued

for several months, but, as no mental improvement whatever occurred, it was stopped, upon which the sugar again appeared and in similar amounts as before.

Case X. is now dead. He was a good example of alcoholic dementia, and illustrated well the almost instantaneous loss of memory for all current events so frequently seen in such patients. Alcoholic intemperance, at first strictly denied by his friends, was afterwards fully confessed. Death took place two years and two months after admission, and, throughout his entire residence in the asylum, there was never any change in the mental symptoms previously described. He was in impaired health on admission and showed a good deal of vascular degeneration. His general weakness gradually increased, his gait became more tottering and finally a sharp attack of diarrhœa, with a temperature varying up to 101 degrees F., carried him off rather suddenly. No symptom of diabetes other than persistent glycosuria ever showed itself; and this, as in the last case, was never on any day absent except when the patient was taking the uranium salt. During the administration of that drug the urine was quite free from sugar. But again, as in the previous case, this was followed by no change in the mental symptoms.

It is to be noted that in all three instances the effect of uranium was not tried until signs of dementia had appeared, and therefore it does not necessarily follow, there would have been no mental improvement had the drug been used earlier.

From the autopsy on Case X., and the subsequent microscopical examination of the various organs, the following facts were gathered:—The frontal sinuses were unusually large, the extension being in an upward direction. The dura mater was thickened, but not unduly adherent to the bone, while the pia-arachnoid was also thick and came away from the cortex, more or less as one sheet; its vessels presented much atheroma. The brain, before having been stripped of its membranes, weighed 1,300 grms., its right hemisphere was 535 grms., the left ditto 540 grms. Extensive atrophy of the convolutions in the fronto-parietal region was observable, but their consistence was somewhat above the normal. Several portions from both frontal lobes were submitted to microscopic examination by Bevan Lewis's fresh method, revealing widespread pigmentary degeneration of the nerve-cells in all layers with marked atrophy of their processes. Numerous droplets of fat were to be seen, but the only evidence of any increase of connective tissue corpuscles and fibrous tissue was near the junction the white and gray matter; there were distinct atheromatous changes in the vessels, as would be expected from the state of those in the pia mater. The pons and medulla revealed nothing not-

worthy to the naked eye, but sections at right angles to the floor of the fourth ventricle showed the same widespread changes in the nerve-cells. The heart was dilated, and it and the liver were the seat of marked fatty degeneration; the latter (860 grms.) also showed an increase in the fibrous matter in the interlobular spaces. The kidneys were in a condition of marked cirrhosis, with here and there small cysts; osmic acid revealed also distinct fatty changes. It is curious that the urine, though so frequently examined, never contained any albumen. The supra-renal capsules and pancreas were healthy, except for a small sclerosed area in the latter, where the fibrous tissue was increased and the secreting-cells encroached upon, in a manner frequently seen in old people whose arteries are athermatous.

Case XI. was one of post-apoplectic insanity. He was very considerably depressed, for which he could assign no reason; combined with this was a certain amount of mild dementia. When last reported he was mentally improving, and coincidentally the glycosuria (never very great) was disappearing. This parallelism, however, was interrupted, for, while the mental improvement continued, enabling him to be discharged recovered at the end of four months, the glycosuria reappeared from time to time. Unfortunately he had a relapse, and was readmitted to the asylum April 28th, 1896, after being at home six-and-a-half months. He was then bodily more helpless, and his sight had begun to distinctly fail; the mental symptoms were the same as on the prior occasion. Sugar was not present in the urine on the day of admission, but appeared at the end of the first week, and continued, in an intermittent manner, during the remainder of the time he was under observation. Traces of albumen were also occasionally present. No drug was employed, except cascara to combat intestinal torpidity. He was again discharged recovered on the 3rd of last July.

Case XII. is one which was previously dwelt upon at considerable length, and which affords us much encouragement. He had suffered from severe diabetes for several years before the onset of mental symptoms, which were mainly intense melancholia associated with delusions concerning evils, impending or that had already occurred, to his relatives; he also exhibited marked impairment of memory. Under active anti-diabetic diet and the administration of codeia we were able to reduce the daily secretion of sugar from 4,000 to 340 grains, and to record an encouraging mental improvement. The amount of urine voided, however, continued large—200 oz. in the 24 hours. On May 4th treatment with uranium nitrate was commenced, all restrictions as to diet being at the same time abandoned. By the end of September this drug, in gradually increasing doses, had entirely freed the urine from sugar, and reduced the daily amount of urine voided to only slightly above normal. This satisfactory result still obtains, except that occasionally a very slight trace of sugar is found. He

is altogether very much better, both physically and mentally, and his discharge is at present under consideration. He still takes the uranium thrice daily.

Case XVI., that of a woman suffering from dementia consecutive to senile mania, remains practically *in statu quo*. Sugar has not been detected in the urine since last report.

Case XVII. is that of W. D., referred to on the third page of my previous paper. He is an example of advanced dementia in a man of 55, consecutive to an attack of melancholia at the age of 28. His mental state remains as recorded last year. Further examination of the urine shows that the glycosuria is frequently absent, and never reaches a greater proportion than two grains to the ounce, while the amount of urine passed is never excessive, nor have any other symptoms of diabetes ever manifested themselves.

The following notes refer to the fifteen cases which have not been previously recorded. The first three are instances where the diabetes developed during the mental malady, and some considerable time after its onset, and in which there was no evidence that the mental phenomena were specially influenced by the presence of the other disease. Following these are two cases, also examples of true diabetes, but in whom the mental symptoms were secondary to and probably caused by the presence of diabetes.

Case XVIII. is a woman, M. W., who was admitted August 5th, 1892, aged 52, in a subacutely maniacal state, chattering rather incoherently and betraying a variety of delusions, *e.g.*, that she had been knocked down by a man, that her husband would not work, &c. In a month she had settled down, but she still possesses many delusions of persecution, and remains slightly maniacal in gesture and speech; she is also fond of being rather fantastic in dress. The urine was not examined on admission, but she suffered from no symptoms whatever of diabetes until quite recently, when it was noticed she drank much, and also complained of perineal irritation. She now voids five-and-a-half pints of urine daily, of a sp. gr. of 1040, and containing 4,000 grains of sugar. The effect of uranium is to be tried.

Case XIX. is that of S. B., a widow, who was admitted to the asylum February 9th, 1889, aged 65, in a state of senile dementia. She has, however, been at times excited, and at first tended to be violent. All along she has expressed many delusions, chiefly of unseen agency. Though not admitted as an epileptic, she had a typical fit soon after admission; she had no more until four years later, when she had several occasional ones in the following few months, but has been free from them since. Diabetes was not discovered until last July; she possibly, however, suffered from it in

October, 1895, as it was then noticed she was rapidly losing flesh, she having been up to then an obese woman. She now passes about 105 oz. of urine daily, of a sp. gr. of 1041, and containing 35 grains of sugar to the ounce, or a total of about 3,700 grains. Her extremely feeble state causes us to somewhat hesitate in the employment of uranium.

Case XX. is that of T. T., a man who was sent to Banstead Asylum, aged 44, in February, 1835. But he had been insane from time to time in several asylums for the previous thirteen years. When first admitted he was full of delusions of persecution and aural hallucinations; as the result of these he would occasionally be violent. In three months the intensity of his delusions diminished, and they finally quite disappeared; he, however, became acutely depressed, but improved again to a certain extent. He remains now generally more or less depressed, never giving any outward signs of grief, but speaking in a despondent, apathetic tone; he is very hypochondriacal, and has many delusions about his organs, *e.g.*, that his lungs are all wrong, and that he is unable to get his breath. As a matter of fact, he is extremely stout, weighing 19 stone, and measuring $56\frac{1}{2}$ inches in the position in which his waist should be, and it is not surprising that he is short-winded. He states that he weighed 13 stone when he was 21 years of age. Except that he is dull and apathetic and leads an entirely vegetative existence he is in no way demented, and has a wonderfully accurate memory. The small cutaneous vessels of his cheeks show some injection, and the cardiac sounds are difficult to hear. No knee-jerk can be elicited. His temperature is usually 98 degrees F. He has been practically a teetotaler all his life. He comes of an insane stock on the mother's side, and he himself has a markedly neurotic, almost deformed palate. Diabetes was not suspected until July, 1895, when it was observed that he had an immense appetite. It was discovered that he was passing 85 ounces of urine daily, containing 1,853 grains of sugar. In spite of dieting and the exhibition of codeia, the excretion of sugar rose to 4,400 grains *per diem*, and the amount of urine to 156 ounces, while he then began to suffer much from thirst. Uranium nitrate has been administered, but with rather disappointing results, for we have not been able to reduce the daily output of sugar lower than 2,600 grains. His mental state shows no variation.

Case XXI. was a printer, H. R., who was admitted to Claybury Asylum, aged 54, in May, 1893, when he was sullen, very depressed, and had attempted to drown himself. He was transferred to us in March, 1896, by which time all depression had passed off, leaving him, however, very demented. That he had diabetes was not discovered till a month before his death; he was thirsty, very constipated, and passed about 160 oz. of urine daily, containing 30 grains of sugar to the ounce (total, 4,800 grains of sugar). Treatment with uranium was just about to be commenced when patient

died after a two days' illness of diabetic coma, his urine containing acetone and diacetic acid. From the wife's subsequent statement it is clear that he must have suffered from diabetes for about seven years, and it is highly probable that it had much to do with his mental breakdown; but it is right to mention that he had been assaulted and badly knocked about the head shortly before the onset of mental symptoms. His younger brother was an epileptic imbecile. Patient had been addicted off and on to alcoholic intemperance. At the autopsy the skull was observed to be heavy and thick, reaching 0.6 cm. in the frontal region. The pia-arachnoid was thickened, stripped from the cortex too easily, its vessels atheromatous, and it appeared unusually dry. The brain weighed 1,325 grms., and felt firmer than normal; its convolutions were pale and putty-like externally and slightly atrophied, while internally considerable congestion was noticed, and an old yellow softening in the right caudate nucleus. Under the microscope the nerve-cells in the frontal lobes were much atrophied, though not to so great an extent as in Case X.; there was, however, more evidence of a generally sclerosed condition; many of the vessels were gorged, had their coats much thickened and showed an accumulation of leucocytes around. In the medulla the nerve-cells below the floor of the fourth ventricle also showed degenerative changes, but to a less extent; the vessels here also were in the same condition as above. The pancreas was smaller and firmer than normal, but contained plenty of healthy tissue. The pericardium was slightly adherent, and there was most extensive peri-hepatitis, resulting in strips of the diaphragm being torn away during the removal of the liver; under the microscope the thickened liver-capsule was seen to extend into the interlobular spaces, resulting in considerable cirrhosis; osmic acid stain was used with negative result; the liver weighed 1,330 grms. The kidneys were also the seat of very marked cirrhosis, but were free from any fatty change.

Case XXII. is that of S. N., who was admitted to Banstead July 28th, 1890, being then a woman of 57. She was very melancholic, declaring that everyone was happy except herself; was very emotional and subject to frequent outbursts of weeping. The urine was not examined on admission, and she has only recently come under my charge; but there is no doubt, from the duration of much troublesome vulval irritation, that diabetes was well developed before the onset of mental symptoms, which remain much the same as on admission. The constant pruritus has, however, given a certain amount of colour to her delusions, for she misinterprets its cause, and is convinced that she has the "bad disorder." She now passes some six pints of urine daily, containing about 4,000 grains of sugar, and of a sp. gr. varying between 1030 and 1040. The effect of uranium is about to be tried, and as her case remains free from any element of dementia we entertain

good hopes that, should it relieve the diabetes, this will be followed by mental recovery, or at least improvement. The prognosis, however, is of course not so sanguine as it would be in a case similar to No. XII., for in this woman the mental symptoms have existed rather more than six years.

The remaining ten cases, now to be described, are examples of glycosuria rather than true diabetes. Cases XXIX. and XXXII. have shown some indications, however, of belonging to the latter class.

Case XXIII. is that of A. S., admitted to Banstead August 3rd, 1895, aged 25. He had then been insane nearly two years, and had been peculiar since the age of 15; he had never done any work for his living, though well educated and a prize winner at school. No relatives insane, and the cause of patient's attack seems to have been due to habitual masturbation, aggravated, perhaps, by the knowledge and discomfort of malformation of the sexual organs, for the penis presents a marked condition of hypospadias. On admission there were no distinct signs of organic disease, but he was thin, pale, and anæmic, and had exaggerated knee-reflexes; palate markedly neurotic. His mental state was one of acute melancholia, with a marked element of stupor. He was conscious of his surroundings, and understood all said to him, but would not vouchsafe a word in reply, merely nodding or shaking his head by way of reply. The urine was found to be saccharine, and daily examination of it showed it to be normal in amount, of a sp. gr. varying from 1009 to 1031, and to contain sugar in amounts varying between 40 and 90 grains, but in an intermittent fashion; sometimes it would be present on two, three, or four consecutive days, and then absent for a day or two. A distinct trace of albumen was occasionally noticeable (this I have frequently seen in habitual masturbators). He has been vigorously and continuously treated with numerous tonics—cod oil, iron, phosphates, strychnine and bitter infusions, and cascara for the state of his bowels—but all of no avail. His mental state remains entirely unaltered, except that he occasionally will enter into a short conversation. This slight improvement was most marked during a course of full doses of thyroid tabloids. Under these he showed a good febrile reaction, but the mental improvement was very evanescent. It is noteworthy that, during the thyroid treatment, the excretion of sugar was more constant, and its amount rose to nearly 200 grains daily, and the urine daily excreted was distinctly above normal. Administration of uranium was commenced last August, and after a few weeks the urine was entirely freed from sugar, and was kept so for five weeks, when the drug was discontinued, not the smallest improvement in the mental symptoms having shown itself. Glycosuria returned within four days afterwards.

Case XXIV. is that of F. C., a carpenter, aged 59, admitted to Banstead October, 1895. There had never been any actual instance of insanity among his relatives, but his father and several brothers died of epilepsy, and patient has an imbecile daughter aged 16. He himself has always been nervous and a bad stammerer. Two months before admission he was in St. Bartholomew's Hospital, suffering from concussion, the result of a fall. His mental symptoms dated from this. He became restless, talkative, partly incoherent, boastful as to his capabilities and forthcoming projects, requiring at last his removal to the asylum, where he soon quieted down, and, while still being somewhat boastful, began to show marked melancholia and a very confused memory. The urine contained sugar on admission, and did so in small traces in a very irregularly intermittent manner for five months, at the end of which time the melancholia showed distinct signs of merging into dementia. Since that time sugar has not been detected.

Case XXV. was that of J. R., a labouring man of 58, admitted to the asylum January 8th, 1896, in somewhat debilitated health, and looked much older than his age. Beyond a tremulous tongue and signs of general vascular degeneration, there were no evidences of distinct organic disease. It was stated that there was no other case of insanity in the family. The patient's palate was markedly neurotic. He had had syphilis in India when aged 25, and had drunk too much in his time. The onset of his mental symptoms dated soon after a severe fall, which he had on to the back of his head some three years previously. He became strange, excited, fancied he heard threats to kill him, then became very depressed, and attempted to drown himself. He steadily retrogressed after admission, both bodily and mentally, and gradually died of exhaustion seven months later. His condition before death might be described as acute resistive melancholia. Sugar was present in the urine on admission, and continued so almost daily for the first month in small amounts—from a trace to two grains per ounce—the amount of urine being normal. The presence of sugar gradually became more intermittent, and ceased for a month before death. At the autopsy the noteworthy abnormalities were a thickened, milky pia-arachnoid; that of the one side was adherent to its fellow at the mesial surfaces. The membrane was markedly adherent to the cortex over the occipital and temporo-sphenoidal lobes; there were only a few limited adhesions over the frontal regions. In the subarachnoid space was much fluid, apparently compensatory to the widespread convolitional atrophy beneath. The brain with its membranes weighed 1,310 grms., and was extremely soft everywhere, its vessels atheromatous and stringy. (Throughout the body generally all vessels showed atheroma markedly.) Under the microscope widespread atrophy and degeneration were seen in the nerve-cells of the cortex and in

those below the floor of the fourth ventricle; there was also extensive interstitial change with the development of a considerable number of "spider-cells." There was an absence of any focal lesions, and all ventricles were free from granulations. No evidence of any former injury to the skull. The kidneys were diminished in size and in a condition of marked cirrhosis, while in the cortices were a few minute cysts. Other organs healthy.

Case XXVI. is that of H. J., a painter, admitted to Banstead August 3rd, 1895, aged 38. There was an absence of any other case of insanity in the family, but he possesses a deformed palate and a peculiarly dolicocephalic head. He had been a hard drinker for many years, and presented a tremulous tongue and exaggerated knee-jerks, with slight ankle clonus. He had recently been in St. George's Hospital, complaining of various tremors, and he was considered there to be a case of plumbism. He had been insane, according to the wife's statement, for about twelve months, he having developed numerous suspicions and delusions of persecution regarding her and others, apparently the result of various hallucinations, and he also was considerably depressed. Glycosuria was detected on admission, but daily examination of the urine showed it to be of a very intermittent character, being sometimes absent for a fortnight at a time, and when present was so in only small amounts—usually about 1 grain to the ounce. The urine was of normal quantity. His hallucinations remained so far in abeyance that he was able to be discharged in six weeks; but was readmitted three and a half months later, suffering very vividly from his aural hallucinations, had become so depressed that he had attempted to drown himself, and had also attacked a man whom he fancied he had heard whispering evil about him. His hallucinations seem now very fixed, and he complains at times of a dizziness in his head and of vague pains about his body. The glycosuria still persists in the same irregular manner.

Case XXVII. has many features in common with the last. It was that of J. B., a printer, admitted to Banstead last August, aged 52. His father had died weak-minded, but had lived to an old age. Many of the members of the family had been drunkards, and patient had himself for a long time given way to frequent excesses in alcohol, with the result that he presented several physical signs of alcoholism, and there were also some evidences of peripheral neuritis. Mentally, he was very depressed and recognised himself as weak, he was the subject of most vivid and distressing aural hallucinations, and in consequence had developed marked delusions of suspicion and persecution. Glycosuria was detected on admission, and subsequent daily estimations showed that its degree varied from two to seven grains of glucose to the drachm urine; the daily excretion of the latter was normal in mental (55 to 50 oz.). The glycosuria was much less intermittent within four previous case, but there were a few occasions on which

the urine was free from sugar for 24 hours. Patient was discharged at the request of his friends at the end of two months.

Case XXVIII. is somewhat similar to the last two, in that he has been a heavy drinker, had developed aural hallucinations and become melancholic. There have been no distinct physical signs of alcoholism, however, and the hallucinations have not been so vivid and distressing. In fact the chief feature in his case is a faulty memory, and along with this there are other signs of approaching dementia. It is that of W. D., a painter, admitted in April, 1896, aged 48; he had then been mentally affected for about six months. Two months before admission he had been in Guy's Hospital with "wrist-drop" and other signs of plumbism. His father and mother died of phthisis, and a sister of his mother was insane at the climacteric. Sugar was present in the urine on admission, and was found in traces every few days during the time that he was actively depressed, but not since.

Case XXIX. is one of post apoplectic dementia in a man, W. W., aged 50, admitted to Banstead April 17th, 1896. Three years previously he had had a "stroke," losing the use of his right side, which still is rather weak. He has a very faulty memory, and he has probably been addicted to alcoholic intemperance. There is marked injection of the cutaneous vessels of his cheeks. The urine has been persistently saccharine since admission, the daily excretion of sugar being usually about 400 grains. He suffers no thirst, but it is possible that I should have been more correct had I classed him among the true cases of diabetes, for the daily amount of urine is usually about 60 or 70 oz., and on one occasion the sugar excreted in 24 hours rose to 1,100 grains. Uranium is being administered with, at present, uncertain results.

Case XXX. is that of R. H. S., a man aged 46, transferred to Banstead in April, 1896, from Grove Hall Asylum, where he was sent in 1891. His is an example of alcoholic dementia with a few delusions of persecution; these however do not distress him, for as a rule he is quite jovial. He is in robust bodily health, and inclined to be stout. Sugar was detected in the urine on admission in amounts varying from traces to 200 grains. Its presence has never been constant; for the first two months it was present about every other day, but since then it has gradually become less and less frequent. The urine itself never exceeds 50 oz. in the 24 hours.

Case XXXI. and the next are examples of typical delusional insanity, but the nature of their delusions differs widely. The first is that of J. S., aged 34, transferred to Banstead in April, 1896, from Fisherton House, where he had been three years. There is nothing noteworthy about him bodily, he looks ruddy, and seems in first class health. He takes little or no interest in his surroundings, being entirely wrapped up in his delusions, which are of a religious nature. He fancies that he has made a

special study of the Divine laws, that he has a direct mission from God and frequently requests to go out in order that he may preach. He may be seen laughing and talking to himself, and appears to be quite happy; but he is never specially elated, and he is certainly never depressed. He voids a normal amount of urine, but every few days it gives decided evidence of the presence of sugar; this has never exceeded 100 grains in the 24 hours.

Case XXXII., the last of my collection, is that of W. J., formerly a butler, admitted to Banstead April 18th, 1896, aged 75, being then said to have been insane two years. He seems to enjoy very good health. He is full of numerous delusions of unseen agency, and is the subject of aural hallucinations, possibly also of the sense of taste, for he sometimes complains of a nasty taste in his mouth, and suggests that his food is tampered with. He imagines he is probed in the back at night, that telephones and "electro-phones" are worked upon him; he is "terrorised" night and day, and hears voices accusing him of gross immorality. He however is never depressed, and, although indignant at all the above, is never excited even when relating his numerous tortures at full length. Sugar is constantly present in his urine; the amount of the latter varies from 40 to 60 oz. daily, containing usually about 650 grains of sugar. He suffers much from constipation, and occasionally asks for water at night, so it is quite likely his is an early case of true diabetes. He obstinately declines to take any drug, hence unfortunately the effect of uranium cannot be tried.

Discussion.

The PRESIDENT—I am sure we are all very much obliged to Dr. Bond for the paper he has given us in continuation of the paper which he read about a year ago. He seems to doubt the possibility of diabetes or glycosuria being a cause of insanity; but surely anything that depresses the nutrition of the nerve-centres is likely to produce mental breakdown, and in some cases, I think, it is quite obvious that the occurrence of glycosuria just turns the scale. The man or woman is insane, but would not otherwise be had they not had glycosuria at that time. There is a very important set of cases which he mentioned, which forms the basis of his statistics—those which I would group together under the name of organic diseases of the brain. Gross organic diseases of the brain are intensely interesting in relation to the occurrence of glycosuria, and I have observed a number in which with gross organic diseases of the brain the condition became one of glycosuria. I was particularly interested upon one occasion in making the post-mortem of such a case; a patient who seemed practically to die of diabetes, as I called it, in whom there was traced from the motor region a sclerotic lesion extending right down to the floor of the fourth ventricle. It seemed to me to reproduce one of the celebrated experiments of the late Professor Claude Bernard, viz., that the lesion might very well be looked upon as the fountain and origin of the malady, which indeed, in spite of all my care with regard to diet and treatment, proved fatal. The patient was, however, under disadvantageous circumstances. He was elderly, and broken down; he had vascular degeneration, general wasting, and general degeneration of the

cortex, but the lesion, which was basal in its situation, seems to me an extremely interesting point. Most interesting from another point of view is the question of therapeutics, or rather the manner in which old friends keep cropping up and coming back to us. Dr. Bond indicated, as a new drug in the treatment of glycosuria, nitrate of uranium. In an old book published more than thirty years ago by the late Sir George Duncan Gibb, who was a specialist in throat affections, you will find it recommended. At all events, he speaks of using the effervescent nitrate of uranium in throat affections connected with a saccharine condition of the urine.

Dr. SAVAGE—The relationship between diabetes and insanity has always been rather a favourite of mine. I think Dr. Maudsley has the credit of describing the early stages, but he has stated cases which, like my own, were alternating. Dr. Maudsley formulated, if I remember rightly, a theory that has been certainly borne out by my own experience, viz., that it is common to find alternation between diabetes and insanity both in families and in individuals. I have seen a good number of patients suffering from true diabetes who, when they have become insane, have lost all the symptoms of diabetes, and when they have recovered from the insanity they have again developed diabetes. A very marked case that I described some time ago was admitted to Bethlem Hospital, and had been under Dr. Pavy's care. Our attention was at once called to the nature of the disease by the large quantity of almond bread that he brought with him. Careful investigation showed that there was no polyuria, no thirst, and no glycosuria. I wrote to Dr. Pavy, who said that undoubtedly the case had been one of diabetes, and was now one of general paralysis of the insane. As the general paralysis advanced, when he passed into the third or paralytic stage, the sugar again developed, and continued to the end. My experience, as far as it goes in regard to the chronic cases, bears out what Dr. Bond has said. The few cases in whom there had been both marked diabetes and marked insanity have tended either to melancholia or dementia. Only quite recently I was in consultation with Dr. Pavy on a case of recurrent insanity with diabetes. The old lady was extremely peculiar and extremely melancholic. She had an idea that her inside was going to be taken away from her, and that she was going to be made an exhibition of. There is also a class of cases, referred to here some two or three years ago by Dr. Ord, and also described by myself, viz., those of puerperal insanity with temporary glycosuria. It has been said this may be associated with recession of milk.

Dr. GOODALL—From what Dr. Bond has said with regard to etiology in relation to the association of these diseases with insanity, it is strange that they do not occur together oftener. As a matter of fact they appear, from my own experience, to be very uncommon. Dr. Bond corroborates this in his paper, and I find that Dr. Siegmund, who has collected a great deal of information on this subject, having examined about six hundred cases for the purpose, says that only in three per cent. has diabetes occurred, whereas transitory glycosuria appears in eight and a quarter per cent. Although perhaps diabetes does not go with insanity direct, yet persons suffering from diabetes undoubtedly show various morbid psychical manifestations. They are neurotic in many ways; members of neurotic families no doubt; they show hypochondriasis, irritability, sometimes excitement, mania, and so on. They have hysterical manifestations and mental instability, but perhaps the very fact of the family being neurotic keeps them from becoming insane, as appears to obtain in the case of so many people who have insane relatives. In reference to the glycosuria to which I have referred, Dr. Siegmund states that this disease occurs in general paralysis of the insane very largely, over fifty per cent. of the cases being general paralytics. The next most frequent was only about seven per cent. in cases of epilepsy, and then came cases of dementia, about three per cent. No other form of insanity was represented in those statistics. A good deal of importance is attached, especially by German observers, to the presence of glycosuria in

general paralysis as perhaps affording help in diagnosing difficult cases. It should be remembered that the epithelium in the fourth ventricle is exaggerated and hypertrophied in the case of general paralysis. Treatment is not of much avail in such cases. With regard to alternation, I very well remember hearing Dr. Savage's remarks on the subject, but in subsequent papers it appears that the two diseases originate together and disappear together, and alternation has not been noticed so much by foreign observers.

Dr. BOWER—The only case of a diabetic patient I have seen rather supports the alternating theory. This was a lady, aged about fifty, admitted with acute mania. We were told that she had suffered severely from diabetes, for some years. No sugar was found in the urine as long as she remained maniacal. In two or three months she passed out of the maniacal state and became demented, then the sugar reappeared. In spite of diet and treatment she continued to get worse, and in a very few months died.

Dr. DOUGLAS—I venture to suggest that, as the question of age is a matter of very considerable importance, it would be desirable if we could have the ages of Dr. Bond's cases stated. I would also ask if he has had any experience with bromide of potassium? I do so because in a case under my care a little time ago, a lady, somewhat over thirty years of age, who was highly nervous, but with no special mental disorder, the sugar was in the first instance very greatly controlled by the exhibition of bromide of potassium. In fact, from something like forty grains, if my memory serves me rightly, it came down to a mere trace. It afterwards went up, and, as we know, in the young these diabetic cases run a very rapid course. This case proved no exception. Gastric symptoms made their appearance, nutrition failed, and the patient died. Before the fatal termination the bromide, which I did not feel justified in continuing, had ceased to have any effect. I had entirely to confine myself to general nutrition. Another case which was under my care was a distinctly mental one in the first instance. For some twelve years this patient, a gentleman over sixty years of age, had an attack of suicidal mania, and was for that reason placed in an asylum for a short period. During his detention it was discovered that he was suffering from diabetes, and when he came under my care he still had something like thirty grains of sugar to the ounce of urine. By means of dieting, codeia and small doses of opium alternately, I was able to reduce this to a mere trace, and for a long time this condition continued. The sugar occasionally increased. He improved under my care, although at first very greatly troubled in regard to religious ideas. It was not a certifiable case of insanity, and there was no recurrence. He had little peculiarities, as he was a man of strong and in some ways narrow views of life, although very highly cultured. There was, however, only one paroxysm, and the diabetes continued until the end of his life, which occurred through exposing himself to cold in a very imprudent way. He was seventy-eight years of age when he died.

Dr. BOND—The President has mentioned glycosuria as in his opinion possibly really causing or starting the mental symptoms. It is possible, but still I should think that even then, as I have been able to get rid of the glycosuria with this drug, which after all does not seem to be new ("there is no new thing under the sun"), some of these cases would have shown an improvement in their mental symptoms. Drs. Savage and Bower spoke of the alternation theory. It seems to me that for those of us who live in asylums the only way to find such a case would be to examine the urine on the discharge of the patient. I have had very little opportunity of examining puerperal cases, therefore it is not surprising that I have not encountered instances as yet. I have to thank Dr. Goodall for several new facts and references that had escaped my notice. I think that when a large number of cases are being examined the statistics given by percentage ought to be laid down, whether they are recent or chronic. I cannot agree with Dr. Goodall about the true cases of diabetes being of theoretical interest only. The cases which I have mentioned are of

great practical interest, because I have shown that if you can get rid of the sugar from the urine you cure your patient of mental symptoms, and even bring about his discharge from the asylum. In answer to Dr. Douglas, the ages will be found in the appendix; but I may say that looking through the whole of them I have been struck by the absence of cases in the developmental period of life. As regards the bromide of potassium I am glad to learn that it is useful, for I have not tried it myself. It is necessary to give any drug a somewhat long continued trial. Dr. Savage's suicidal case at first seems not to confirm my results, but there is at least this much to say, that the disappearance of the mental symptoms was coincident apparently with the disappearance of the sugar from the urine, although sugar subsequently returned.

*Cases in Lunacy Practice.** By H. J. MANNING, B.A., M.R.C.S.,
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I wish to submit, quite briefly, two or three cases in which I have lately been engaged, and to ask this meeting to express an opinion upon them, and upon certain considerations which they seem to suggest.

I.—The first is that of a gentleman, aged 48, an Englishman, but resident 25 years in Alexandria, where he held a good appointment. He married 20 years ago a Greek lady, by whom he had several children. All went well with him till January, 1894, when he had a transient attack of facial paralysis, followed by considerable mental excitement and frequent exhibitions of violent temper directed especially towards his wife. The acute excitement passed off, but left him, according to the evidence of those about him, a changed man. He neglected his business, exhibited an inordinate craving for whisky and cigarettes, which he insisted on smoking all day, and was suspected of masturbation. In March following, while walking home from his club, he had an attack of left hemiplegia, which passed off in a couple of days. As soon as he was able to be about again he resumed his excessive smoking, violently assaulted his wife if she offered any remonstrance, and entered into immoral relations with another woman, upon whom he squandered all the money he could lay hands on. Two medical men who were called in expressed an opinion that his condition was serious, one of them—an Egyptian Pasha—announcing that he was suffering from “emulsion of the brain,” a phrase to which I would draw attention as novel and not inapt. As he was fast ruining his family it became important to place him somewhere out of harm's way. There are apparently no suitable houses or hospitals in Egypt, and I was asked to receive him. I sent out a form of application for admission as a voluntary boarder, which he signed readily, and I admitted him 19th July, 1894. He made the journey quite alone, and was met at Liverpool by my assistant

* Read at the Autumn Meeting of the South Western Division.

medical officer, who found him a very pleasant companion, and was unable to detect any overt sign of insanity. On admission he was quite rational; very courteous and pleasant in manner and appearance; there was no trace of hemiplegia; he could walk firmly and grasp strongly; his pupils were rather dilated; the knee-jerks were absent; he had lost the senses of taste and of smell; was rather anæmic and very restless, always walking about the room during a conversation. He complained much of insomnia. He denied ever having had syphilis; he also denied all that his doctors and his friends reported as to his recent behaviour, his theory apparently being "all men are liars, myself excepted." Under general tonic treatment his insomnia disappeared, and he gained strength and condition, but he exhibited always an inordinate craving for tobacco and drink; he had no regard for truth, telling the most barefaced lies if it suited him. He would pilfer constantly any small articles he could lay hold of, always denying the act even when the pilfered articles were found upon him. Masturbation was not detected, but his conversation was very loose. Indeed, he seemed to have no moral sense. Twice, at long intervals, he lost control of the sphincter ani, defecating in his trousers, and being apparently unaware that he had done so.

During his residence with us of 16 months he was examined several times by medical men with a view to obtaining certificates and a reception order, but without result. Two Commissioners in Lunacy also, after a prolonged interview, expressed an opinion that he was not certifiable. For he could be very entertaining and plausible, was never incoherent, and had no delusions. He is an excellent linguist, speaking four languages fluently. After 16 months' residence he claimed his discharge and went into lodgings close at hand, his friends paying his board and providing him, through me, with pocket-money. While there he was one day brought home unconscious and convulsed, by strangers who found him in that state—evidently a congestive attack, which passed off in a few hours, leaving him much as before. Shortly after this he was arrested for a petty theft, which of course he denied, though he was actually seen to commit the act, and the stolen articles were found in his pocket. For this theft he was sentenced by the Bench to two months' imprisonment in the County Gaol.

On his release he presented himself in my consulting-room, miserably unhappy, vowing his innocence of course, but asserting that the lesson he had had would prevent any chance of his again getting into the hands of the police. I urged him to return to our care as a voluntary boarder, but that he refused. In a very short time he was at his old tricks; on one occasion he was seen trying to remove a brass cross from the altar of a church, and was again arrested. This time the Bench committed him to take his trial at the Assizes. On the day of the trial I went into the witness-box and related his history, expressing an opinion that he was of un-

sound mind. The jury accepted this view, and the judge sentenced him to be detained during her Majesty's pleasure. He is now under the excellent care of Dr. Bowes, at the Wiltshire County Asylum.

There is no family history of insanity. His father, a shrewd man of business, died of apoplexy. His mother, well over 80 years of age, is still living and hale. But his eldest brother, though showing no signs of insanity, behaved very badly to his wife, and was extremely immoral. Another brother was murdered at Port Said by an Arab whose wife he had seduced.

II.—My next case is that of a gentleman unmarried, age 42, of no occupation, living with his sister on their freehold estate. I was summoned to see him in consultation in June of this year under these circumstances. Though a man of strong religious tendencies, and hitherto affectionate and very steady, his manner and habits had of late undergone a change. He had behaved absently and strangely at home, had developed optimistic ideas, had shown some loss of memory and of affection, and frequented low company; and was said to have given way to habits of sexual intercourse with prostitutes of the very lowest grade, and with no attempt at concealment. On the day before I saw him, while walking with an attendant who had been placed in charge, he stopped in front of an hotel where some females were sitting at a window and deliberately exposed himself. He became violent when his attendant interfered, and had to be forcibly removed by two or three men before he would desist. When I saw him he was lost and confused, and seemed to be hardly aware of what he was doing. There was inequality of the pupils, loss of knee-jerk, unequal muscular power in the two hands, and a vacant silly expression. Still he could pull himself together, to answer questions in a way, and the three medical men who took part in the consultation, though anxious to see him placed under restraint, were unwilling to certify.

The patient was advised to place himself under treatment as a voluntary boarder, which, after some persuasion, he consented to do. Alcoholic excess was denied positively by those best able to judge. There was no evidence of *coup de soleil*, nor of syphilis, nor of a blow on the head, nor had he been the subject of influenza, nor of any serious illness. No previous case of mental disorder was known in the family, but the father was said to have been eccentric. For a day or two after admission he was morose, silent, angry; attempting to scale walls, and burst open doors, and he could not sleep. Then the air cleared and he behaved calmly, and said he had no recollection of having been discourteous or aggressive. He denied positively the allegation as to exposure of his person, several eye-witnesses notwithstanding. Probably this and other acts were automatic, and he was himself profoundly unconscious of them. After two months' residence, during which

he behaved well, though showing some loss of memory and some evidence of weakmindedness, he claimed his discharge, and is now resident with a clergyman in a neighbouring county. He is perfectly rational and coherent in conversation, but apt to burst into tears with very slight provocation, and, if excited in argument or discussion, there is a just perceptible fibrillary trembling of the lip muscles.

What I suggest to you is that these two gentlemen are the subjects of general paralysis, and if that is so the cases tend to confirm the views of those observers who are telling us that this disorder has undergone a change of type. For, observe, that although in both cases it was much desired that the patient should be deprived of free agency, in neither case could a reception order be obtained. In the first case several medical men, including the surgeon to the local police and the surgeon to the county gaol, and in the second case three medical men, who had met for the express purpose of certifying, all declined, for the reason that the insanity of these gentlemen—if they are insane—is shown by conduct only. When I commenced the practice of this specialty, now thirty-four years ago, all the cases of general paralysis which came under my notice were of the classic text-book type, with a well-defined first, and second, and final stage. Diagnosis was not difficult, prognosis was simplicity itself. One could say with safety, this person has a disease of which he will presently die, in a year or two at the most, and you may make your dispositions accordingly.

Most of us would hesitate now, I think, to make any such confident pronouncement. For example, I am at the present time attending a gentleman whom I have attended, on and off, for some six years, who, twelve years ago, was pronounced by a very distinguished specialist to be a general paralytic. I believe the distinguished specialist was right, but if so, is it not remarkable that the patient should be still in the flesh? And, putting aside doubtful cases, such as those I have reported to-day, I have had during the last few years to deal with undoubted general paralytics of whom hardly one has behaved in the old-fashioned way as set forth in the books. Diagnosis I find now very difficult, and prognosis very uncertain. I am glad to have this opportunity of asking the members present what is their experience?

III.—My last case is that of a lady aged 56, who has since girlhood been subject to recurrent attacks of mania, for which I have

treated her on very many occasions. We last admitted her in January, 1895, the symptoms being of the usual character—constant incoherent chattering, a tendency to aggressiveness, and inability to sleep. To combat these symptoms sulphonal was prescribed in doses of 20 grs. at night, followed by 10 grs. in the morning, with an occasional dose of cascara to relieve constipation. This was continued pretty regularly (except as to morning dose of sulphonal, which was sometimes omitted) for about six weeks, and she seemed to be doing well till 25th February, when she was seized suddenly with violent sickness and general gastric derangement, and a peculiar deep violet colour of the urine was observed. After three or four days the vomiting ceased, but severe pain referred to the region of the liver was complained of, and the patient became very prostrate. The prostration continued, and after two or three weeks she seemed to be in a dying state, the last offices of the Church being administered in the presence of her friends, whom we had summoned for the purpose. There was at that time excessive prostration, paralysis of most of the voluntary muscles, loss of control over the sphincters, everything being passed in bed, extreme emaciation, and a small, thready, hardly perceptible pulse; the knee-jerks were lost, and the temperature was sub-normal. For some weeks she lay in this state, and in the opinion of several medical men who saw her with me from time to time, recovery was hardly a remote possibility, the respiration being at times implicated, and on two occasions syncope, following slight hæmorrhage from the bowel, placing her life in imminent danger.

And here I have to confess that the nature of this illness was a complete puzzle to me till I happened to take up a copy of the *Glasgow Medical Journal* for January, 1895, which contains a paper by Dr. Oswald,* of the Glasgow Royal Asylum, describing a fatal case of hæmatoporphyrinuria following the administration of sulphonal. Then the darkness became light. Dr. Oswald's graphic description of his case might well have been a description of ours. I regret very much that the urine was not submitted to an exact analysis, but the peculiar colouring only lasted 24 hours. We deferred setting aside a specimen too long, and the opportunity did not recur. But the naked-eye appearances and the peculiar staining of the bed linen were, we thought, sufficient evidence that the colouring was due to excess of hæmatoporphyrin.

How this patient escaped death I do not know. I need not weary you with an account of the treatment. Tincture of nux vomica was the medicine mostly used, but I think her natural strength of constitution, aided by close and constant attention to

* See Report of Scottish Divisional Meeting, *Journal of Mental Science*, Jan., 1895, Vol. xli., p. 165.

nourishment and nursing day and night through many anxious weeks, may be credited with the fortunate result. It was not till September following that she was able to be lifted out of bed, and from that time she began by very slow stages to regain muscular power, but it was nearly twelve months from the first seizure before she could walk without help. I have seen her within the last few days. The only remaining trace of what she has gone through is a certain muscular difficulty in writing or in any sort of handiwork. With this exception she is quite strong.

Of course everyone here is familiar now with Mr. Oswald's case and with the literature on the subject which has appeared in this country, not as yet, I think, very extensive nor very precise. Continental observers seem able to produce fuller evidence. I have been especially struck with a paper published in 1893 in a French medical journal—*La Semaine Médicale*—by Dr. Lepine, Professor of Medicine in the University of Lyon. The Professor has there collected from the practice of several medical men, ten cases, which he records in a pithy matter-of-fact way, in all of which death followed the continued administration of sulphonal. He notes that in all these cases the train of symptoms was identical, viz., first, severe gastro-intestinal derangement with deep violet-coloured urine from hæmatoporphyrin, followed by prostration, paralysis, death. He notes as singular that all the fatal cases were in women, and he gives the results of certain experiments made upon animals with sulphonal with a view (apparently unsuccessful) to explain the occurrence of hæmatoporphyrinuria. He concludes with the obvious remark that drugs, if frequently useful, are also apt to be dangerous; and he offers a protest against the inconsiderate use of the new agents which are being constantly introduced into practice.

For myself, the longer I live the stronger becomes my conviction that the endeavour to control maniacal excitement by the use of powerful depressants and hypnotics is a practice not to be commended. Some of us will remember the croton-oil blister applied to the shaven scalp in acute mania, while the internal administration of our old friend, the tartrate of antimony, was vigorously pushed. What likelier to hasten the advent of that exhaustion which we dread so much in these cases? Then I recollect Dr. Kenneth Macleod, in 1863, advocated in the *Medical Times and Gazette* the exhibition of five-minim doses of Scheele's hydrocyanic acid, to control maniacal excitement, every quarter of an

hour if the effect were not promptly established, quoting the usual array of successful cases. Being young, and enthusiastic, and credulous, I adopted the advice in three cases then under treatment. The first two, fortunately for themselves and perhaps for me, vomited the drug. In the third, at the administration of the second dose, the pupils dilated, the face blanched, the head sank upon the breast, and nothing but the most energetic measures preserved the patient's life.

A little later hydrate of chloral came upon the scene, 30 grs. three times a day being recommended. I managed to produce paraplegia with other threatening conditions in two cases of my own, and (as before) narrowly escaped a coroner's inquest. Again a few years, and hydrobromate of hyoscin was introduced, with the usual flourish of trumpets in the shape of a paper of illustrations and the customary record of marvellous results. Will anyone now venture to call hydrobromate of hyoscin a drug to be relied on? I have seen the hypodermic injection $\frac{1}{100}$ gr. produce alarming symptoms in a person of full age and apparently robust constitution.

If these drugs could be shown to be in any degree curative their use might be defensible in spite of the risks they involve. But where is the evidence that they do more than palliate? and are we justified in using as palliatives medicines whose secondary effects may be so disastrous? I am strongly of opinion that, in the present state of our knowledge, better results will follow the treatment of acute maniacal excitement by close and constant nursing and careful administration of nutriment through the day and night, and the judicious use of mechanical restraint, than can be claimed for any other method or methods. I feel the responsibility—shall I say the audacity?—of asserting this creed in this building, which we all know as a temple of non-restraint strictly and conscientiously carried out, and in the presence of our host whom I regard as a very high priest of that particular gospel. Nevertheless, such is the opinion forced upon me by a pretty extensive experience, and I must give expression to it.

Discussion.

Dr. WADE said that the longer he lived the more firmly he was convinced that the use of sulphonal was most injurious. In an asylum where he formerly was they objected to the use of any narcotics at all, and he was astonished to find the place so quiet. He adopted the same system at Wells, and had not used narcotics for

years. He was once recommended to give a trial to hyoscine, as a most valuable drug. But he was very sorry he ever did so; the patients treated with it were worse than before, and it led to a serious accident. The patient did not die, but he never used hyoscine again.

Dr. BENHAM said he had instituted a lengthened series of trials of hydrobromate of hyoscine; and was bound to say that in some cases it gave the results mentioned. It had a very depressing effect on the patient. After an interval of non-use they had taken to it again; and, although used in large doses, they had no serious results. He had come to the conclusion that the evils which arose previously were owing to the presence of impurities in the drug. With regard to sulphonal that also was now produced in greater purity, and in many cases they found it efficient and beneficial.

Dr. STEWART said the first point that was suggested to him by Dr. Manning's admirable paper was how frequently medical men were called upon to certify cases which were so close to the border line separating medical insanity from legal insanity that often a medical man, rather than commit himself, if he had not a very excellent knowledge of the subject, would give his decision in favour, if he might say so, of the patient and against the interests of the public. When he said in favour of the patient he did not mean that he would benefit by being allowed to be at large. Far from it; but they must recognise the extreme difficulty of finding out such points as would justify opinion as to the mental condition, and to do their duty both to the patient and to the public. He remembered (in consultation with the late Dr. Davy, at Bristol) a patient whose case was assuredly one of incipient general paralysis; yet the conditions were such that he did not feel justified in certifying, and another medical man also refused. But he took particular pains, and so did Dr. Davy, to tell the friends that only a few months would elapse before evidence of his condition would be placed beyond doubt. The friends thought that extraordinary, and that the patient's condition would be rather improved than otherwise if certain things were done. Doctors, when called upon, should be very distinct in warning friends as to how matters stood with the patients. It occurred to him that Dr. Manning deserved to be praised for the courage with which he had there, in that temple of non-restraint, distinctly, decidedly, honestly, and fearlessly expressed his opinion that the judicious use of mechanical restraint was one of the greatest boons that practical physicians can confer upon an unfortunate sufferer. He remembered in an asylum of which his father was Superintendent, a room where the most cruel methods for restraining patients were grouped. Those were discarded by his father; but his experience taught that there were at times cases in which it would be a benefit to use some form of restraint, and in such a way as to make him (his father) feel in his conscience that he was doing the best for the patient.

The PRESIDENT said that he was sure that Dr. Manning must be gratified by the discussion that had taken place on his paper. In the first case mentioned he thought that the patient was a general paralytic, and therefore was much gratified that at the close Dr. Manning suggested that it might be a case of that nature. With regard to the premonitory symptoms of general paralysis anyone who read the chapter in his work on the premonitory stage of general paralysis would see how difficult it was to state the possible variety of symptoms in the premonitory stage—before the disease became established. The case Dr. Manning brought before them was an admirable example of these difficulties. Insanity or mental derangement in certain cases showed itself more in conduct than in any definite so-called mental derangement. Of course, conduct was the outward and visible sign of an inward condition of mental disorder. The cases mentioned by Dr. Manning were an important addition to the cases in which insanity manifested itself in conduct in the early stage. Referring to the third case quoted, he said he had for years been in the habit of warning patients against the use of sulphonal, and also against the use in large doses of hydro-

bromate of hyosine. He had reduced his own use of sulphonal to very rare and occasional doses.

Dr. MANNING, in replying to the discussion, said that with regard to the third case he omitted to say that at the meeting of the British Association at Carlisle (Medico-Psycological Section) he heard it said that if sulphonal was given in milk dangerous consequences would not follow. As to that, he ought to have said that sulphonal, in the case he had mentioned, was nearly always given in milk, and therefore the speaker he had mentioned must be mistaken. In future he should never use that or any other powerful narcotic in cases of excitement. He had published a short series of cases in which acute mania had been cured without recourse to any drug whatever, and he hoped before long to supplement them with other examples. He thought he had shown the value of using in some cases an occasional application of the camisole or some other form of restraint.

CLINICAL NOTES AND CASES.

Maniacal Chorea in a Male Adolescent. By THOMAS PHILIP COWEN, M.D., B.S. (London), Assistant Medical Officer, County Asylum, Prestwich, Manchester.

J. H., male, aged 21 years, single; a hanger-on at a colliery; was admitted to the County Asylum, Prestwich, Manchester, on September 25th, 1896.

Family History.—No history of neuropathic heredity; none of the family have ever suffered from chorea or hysteria. Both of the patient's parents are living, and are in good health.

Previous History.—The patient has always been in fairly good health, and has never had chorea or other neuroses in his earlier years.

He has always been a quiet, sedate youth, who preferred solitude and study to the company of his more boisterous fellows. Considering his station in life he has had a fair education.

History of the Present Illness.—He showed no symptoms of mental disorder until about a fortnight before his admission to the asylum, when his friends noticed that his natural dull reticence was becoming more marked, and that he seemed more and more heavy and stupid. At the end of a week a marked condition of mental stupor resulted. Four days later he emerged from this mental cloud and became violent and acutely maniacal, shouting and raving incoherently, and presenting the usual tendencies to destructiveness and general impulsiveness.

State on Admission.—*Physical State.*—A tall, thin young man; well-formed head; brown hair; blue eyes; slight moustache; dull, heavy aspect. Very little play of facial expression, except when excited and shouting. All his organs seemed healthy, and the urine was normal.

He presented no indication of nervous disease, showing no

tremor or abnormal movements at this time. The pupils were equal, of medium size, and reacted well. Reflexes normal.

Mental Condition.—For the most part of the day he remains in a condition apparently of mental stupor, but when addressed he starts up in a wild fury, and violently attacks all and sundry. After this outbreak he shouts, dances, and gesticulates wildly for an hour or so, but lapses finally into his old semi-stupor. He cannot give any coherent account of himself. Is wet and dirty in his habits. He requires constant attention with regard to feeding, &c.

During the first week after admission the maniacal condition became more established, and although the periods of stupor were still marked, they were shorter and confined to the daytime. He had very little real sleep. Towards the end of the first month the mental disturbance became much greater, and the wild excitement continuous.

On October 26th, 1896.—“He is very noisy and acutely maniacal, and shows very great excitement indeed. He shouts, dances, and rushes wildly about the room. Is very dangerous, and makes impulsive attacks on any who go near him. He strips his clothes off and tears them to shreds. Filthy in his habits. He refuses to converse. His wild ravings cannot be understood, being utterly unintelligible. Has to be fed with a feeding cup. Is in fair condition. Sleeps for two to three hours about every other night. He walks with a peculiar, shambling gait.”

November 1st.—“He has now odd choreiform twitchings of hands and facial muscles. He is still very excitable, but if anything the maniacal fury is less, and he is less aggressive. Sleeps fairly.”

November 5th.—“The choreiform spasms have become more general and of larger amplitude during the last four days, and he now presents constant quick irregular movements of the limbs, head and neck especially, and of the trunk also, but to a less degree, continuing both night and day. Voluntary movements are much interfered with, and he sustains many falls in consequence. Both sides of the body are equally affected. He has much difficulty in taking food, as the spasms are much increased by the attempt, and the teeth close so violently on the edge of the feeding cup or spoon as to almost break these utensils. He cannot now sleep at all.

“There is much less mental excitement now, and he is at times much more coherent, and it is easier to arrest his attention.”

November 6th.—“The violent choreiform movements are rather more marked to-day, they are as general as ever. As the chorea increases in violence the mental excitement lessens, and he now is able to jerk out a few words in answer to questions. He expresses ‘a sense of great fatigue and desire for rest.’ No pyrexia. No cardiac lesion.”

During the following week hypnosis by suggestion was tried, with the effect of producing a sleepy condition for a few hours every night, but without any effect on the violence of the muscular movements.

In the course of the next month the choreiform movements gradually became less violent and extensive, and for a short time there was a return of the maniacal excitement, but this soon passed away again.

December 5th.—“Spasms are much less marked, but still retain their irregularity. There is little difficulty now in feeding him. He sleeps for three to five hours at odd times during the 24 hours. Mentally he is variable, but presents some maniacal excitement at times. No cardiac lesion.”

December 20th.—“There is still less jerky movement, which now is almost limited to irregular spasmodic movements of hands and arms, at times of head, and muscles of mouth of little amplitude.

“He is eating well, and is putting on flesh. He is dull and stuporous, and sleeps for the greater part of the day. When aroused he looks vacantly around him, but does not speak or seem to understand when addressed. He seems quite apathetic. Is wet in his habits at times still.”

January 5th, 1897.—“The spasmodic jerkings have quite disappeared. There is also a great improvement in his mental condition. He is brighter and more lively in every way. Takes interest in all that goes on round him, and is beginning to employ himself in the ward. He converses fairly coherently, although of slow mental reaction, and he seems to find it difficult to find the right words; otherwise there is no obvious mental defect, and he is on the high road to recovery.”

January 16th.—“There has been no relapse, and he seems to have quite recovered. All memory of events occurring during the height of the attack seems obliterated.”

Remarks.—We are of opinion that the case is one of “maniacal chorea,” or “chorea insaniens.” The peculiar movements observed were practically identical with those of the common form of chorea, and during the whole period (6½ weeks) they were present, no departure from the characteristic “irregularity” was observed.

Gowers says (*Dis. Nerv. Syst.*, Vol. ii., 2nd Ed., p. 605) that “Maniacal chorea occurs chiefly in females at or soon after puberty. The mental disturbance may not come on until the disease is well developed, or it may precede the chorea. Thus either the mania or the chorea may be primary.”

It seems hardly necessary to discuss the distinctions

between the varieties of chorea—Huntington's hereditary chorea, hysterical chorea, the choreic motor disturbances which occur in insanity and maniacal chorea—as the history, onset, course, and favourable result in the above case limit us to a diagnosis between the last two varieties.

L. Meyer (*Dict. Psychol. Med.*, Art. "Chorea and Insanity") says, "The choreic motor disturbances which occur in insanity nearly always bear a less significant character than typical chorea. Many of the distorted movements, which sometimes occur at the highest stage of maniacal excitement, and which were thought to be choreic by Griesinger and Schüle, have been proved to be quite voluntary."

The irregular movements in this case were entirely of the choreic type, and we think that we may fairly put this group of cases on one side. "Maniacal chorea" is therefore alone left to us.

There are a few points of interest in the case.

- (a) Its occurrence in a male adolescent.
- (b) The precedence of the chorea by the mental disturbance by a considerable interval.
- (c) The acuteness of the chorea, but without pyrexia.
- (d) The decline of the mental excitement as the choreic movements rose in severity.
- (e) The dull apathy from exhaustion of the nervous centres after the cessation of the motor storm.
- (f) Rapid recovery in so short a time as a month after the movements had ceased.

We have ventured to record this case as one of considerable rarity, at all events to us, and more especially as it has occurred in a male patient, which, to judge from the descriptions published, is a very unusual event.

OCCASIONAL NOTES OF THE QUARTER.

The Criminal Lunatics Acts.

We observe with pleasure that the statement which has appeared in most of the organs of public opinion within the past few weeks that the Government propose at last to consolidate the law applicable to criminal lunatics, not only remains uncontradicted, but has received an appreciable—though cautious—measure of official countenance. Since

Sir William Harcourt's Departmental Commission reported in 1882 (par. 12, 7th Report), "That the existing laws relating to criminal lunatics in England and Wales are very complicated and perplexing, and that it is most desirable to consolidate and amend them," we have had two contributions towards the attainment of this end. First came the Criminal Lunatics Act, 1884, a useful, though most imperfect instalment of consolidation and amendment. And then after an interval of twelve years the Legislature actually took courage to provide (in the Short Titles Act, 1896) a general name, "The Criminal Lunatics Acts, 1880-1884," for all the statutes in which the law on this subject is embodied. The work is, however, to all intents and purposes still undone. It would be ludicrous, if it were not positively mischievous, that a person wishing to discover the state of the criminal lunacy law should have to consult first two sections in a half repealed Act of Geo. III., then an Act of 1838, then another of 1840, next a statute of 1851, after that an Act of 1860, and finish up his investigations by a study of the Trial of Lunatics Act, 1883, and the Criminal Lunatics Act, 1884. Moreover, much of the machinery in the earlier Acts is quite archaic. Look at the provisions for the protection of the Sovereign's person in Sec. 4 of 39 and 40 Geo. III., c. 94. Or take the cumbrous description of the procedure to be adopted in Scotland and Ireland under the Lunatics Removal (India) Act, 1851. It is simply disgraceful that such lumber should be allowed to overload the statute book. All the really vital operative provisions in the Criminal Lunatics Acts, 1880-1884, could be comprised in a Bill of 50 sections. In the present stage of legal and medical opinion on the subject, any attempt to incorporate the law of criminal responsibility in the Bill would wreck its chances of passing. But we should at least be glad to see some check imposed upon the power, too frequently exercised of late years, of the Home Secretary to remit prisoners becoming lunatic before arraignment direct to a criminal lunatic asylum without judicial inquiry.

The Asylum News.

The new Journal of the Association of Asylum Workers has commenced its existence with a January number for the present year. In welcoming the new-comer we may reiterate our

hopes already expressed, that it may be of real use and help to asylum workers, and may be successful in avoiding the difficulties which usually beset a young publication.

The objects of the Association are briefly stated, as the improvement of the status of asylum nurses and attendants; to secure the sympathy and co-operation of those interested in institutional work; and, lastly, to provide Homes of Rest for those engaged in asylums.

Homes of Rest would be very useful without doubt, although some may assert that the Asylum Committees already deal liberally with their sick attendants. One difficulty in connection with the establishment of such homes would result from the wide area over which the members of the Association are scattered, rendering the cost of travel somewhat expensive.

The names of a considerable number of County Asylum Superintendents are printed as supporting the Association, but their names are rather conspicuous by their absence from the list of the Executive Committee. It would be interesting to know if this is an intentional arrangement and the reasons if that is really the case.

The financial statement is satisfactory, showing a balance of nearly a hundred pounds in hand and a membership of two thousand. We do not learn whether the *News* is to be monthly or quarterly, but we note that it is printed and published at the Lancaster County Asylum through the generosity of Dr. Cassidy.

No information is given as to the limitation of membership; whether an attendant is eligible the moment he (or she) is engaged in an asylum, or whether the membership continues after leaving asylum service; whether indeed the Association exercises or professes to exercise any power of selection, or whether every employé of an asylum, however little experienced in the care of the insane, is, by the fact of his employment, entitled to membership. These and many other enquiries that suggest themselves will probably receive solution in the coming numbers of the *Asylum News*, to which we shall assuredly look forward with interest.

Sanitary Science Scholarship at Claybury.

All alienist physicians will rejoice at the decision of the Technical Education Board of the London County Council to give a scholarship in Sanitary Science, tenable in the Patho-

logical Laboratory at Claybury for one year, and renewable for a second or even third year. The scholar to devote the whole of his time "to the study of the working and effects of preventable, social, and industrial causes of insanity."

We hail with delight this additional evidence of the recognition by this County Council of its responsibility in regard to the insane as extending beyond the mere provision of buildings for detention.

The direction of the scholar's work is an evidence, too, that the Board (and Council) has recognised the fact that the most important and urgent objective is the prevention of insanity. If this objective be kept in view, we may hope that important advances in the early treatment of mental disease will follow at no very distant date. The need of such advances we cannot too loudly or too frequently reiterate. Too many cases are admitted to asylums, after months or years of incipency, in a hopeless state, and some observers, we fear, are too ready to conclude that they were hopeless from the beginning. This pessimism does not fortunately tally with experience of other diseases, or with the observations of those who have opportunities of dealing with incipient stages of this disease.

The direction of the scholar's work has no doubt been greatly determined by the recommendations of Dr. Mott, who suggested the following subjects:—

1. The relation of alcohol, syphilis, and infectious diseases to mental degeneration, especially general paralysis of the insane.
2. Puerperal mania and its relation to infective agencies.
3. The causation of epidemic dysenteric ulceration in the insane and its prevention.
4. The influence of noxious trades, *e.g.*, poisoning by lead, etc.
5. The chemical changes occurring in the brain as indicating the causes of its degeneration.

The example set by the London County Council in establishing a pathological laboratory and encouraging research will, we trust, be followed in other parts of the country; and although it is not in the power of every county to do the same, yet by several combining the result might be obtained.

The new divisions of the Association would be giving a striking proof of their usefulness by striving to obtain the

establishment of such an institution as that of Claybury within each of their areas.

We must again repeat our admiration of the public spirit and advanced views, in this matter, of the London County Council.

Mental Disease Out-Patients.

We have pleasure in drawing attention to the fact that an out-patient department for mental disease has now been established for upwards of two years at Sheffield, under Dr. Crochley Clapham.

Dr. Clapham reports that it has been successful in attracting a considerable number of patients, in a fair proportion of whom he believes that the necessity for asylum treatment has been avoided, therein confirming the experience of a similar department at St. Thomas' Hospital.

Dr. Clapham is also of opinion that his department has exemplified the greater readiness of such patients to be associated in treatment with other diseases rather than to attend as out-patients to an asylum or lunatic hospital. Those patients who will go to the latter are mostly cases who have been in-patients or are already qualified to become so.

That Dr. Clapham may soon be imitated in other large towns is a wish that will occur to everyone interested in the prevention of insanity.

The Registration of Mental Nurses.

The Royal British Nurses' Association has of late passed through stormy times. It is hardly our province to discuss the difficulties that have arisen, but we must enter with interest into the proposal of Dr. Outtersson Wood that mental nurses should be admitted to registration and membership of that Association. Apparent misunderstanding and gross misrepresentation have been in the air. The old, old story of the inferiority of asylum nurses has been retold; the echoes of the bad old times have been re-echoed; the iniquity of Dr. Woods' insidious arguments has been laid bare in the columns of *The Hospital*. It would seem that the work of the Medico-Psychological Association and its most active members for the last decade is as naught. The Handbook, the Educational Committee, the Registrar are but figments of a depraved imagination. Ignorance cries aloud in the market-place, naked and unabashed!

We are confident, however, that the persistent, quiet, disciplined labours of so many medical officers have not been in vain. The Nursing Register of the Association has grown to bulky proportions year by year. It is an assured fact, not to be shaken by empty asseverations, that the trained attendants and nurses of our asylums will favourably compare with any body of nurses in other realms. We have, indeed, given the world a lead in this direction.

It is not so much an affair of examinations as a course of education in which reason and practice go hand in hand. We are alive to the importance of the medical aspect of this work, and lunacy is an affair of medicine.

Put aside for a moment the argument that medical officers should train their nurses in the care of bodily sickness. That is founded on a total ignorance of the course of education required by the Medico-Psychological Association. What mental nurse can be considered efficient who does not practically know how to manage cases of ordinary physical disease? It may be, indeed, that the syllabus and regulations should more definitely state that a certain period should be passed in the infirmary section of each asylum; but there is, and has been, but slight chance of success in gaining the certificate of this Association, for candidates unable to satisfy the examiners that their knowledge of the details of sick nursing is adequate for their calling. We cannot, however, but see indications of danger in this latter-day education of nurses. It is given to the medical profession to direct the treatment of the patient; it falls to the nurses to carry out that treatment in an intelligent, methodical manner. Any nurse who aspires to direct medical treatment must change her profession and take the higher place as best she may. It is no part of the programme to provide a short cut to the healing art.

A fully-trained nurse cannot emerge from a general hospital armed at every point like to Minerva from the head of Jove. It is mere arrogance to assert that she is competent to deal with disease in its protean manifestations. She has still got to reckon with the dangers of maternity cases, the phases of fevers, the crises of mental disorders. We hold, therefore, that a well-trained mental nurse is just as worthy of a place on the register of the Royal British Nurses' Association as her general hospital sister. Her suitability is attested, her experience is indubitable, her knowledge is tried.

After all it is but few who will press their claims. The great majority are attached for better or worse to the institutions where they have qualified for their high vocation. The public interest, however, is paramount. Certain attendants and nurses, after their training is completed, enter the field of private work, and the medical profession should be assured that those whose services are available in that domain are trustworthy and efficient. If the Royal British Nurses' Association is to command the confidence of the nation, it must hold at disposal the names of those of the nursing profession who are qualified to minister to the sick in mind. It is possible that some may be found to combine in one person a knowledge of surgical and mental nursing, as well adapted by nature and training to tend an ovariotomy case as a general paralytic, just as a country practitioner has to face all sorts and conditions of diseases. For good or for evil, nevertheless, specialised work is the order of the day; and we are convinced that the man in the street will have his doctor's approval when he secures a surgical nurse for a surgical case, and a mental nurse for a mental case.

The question has been carefully considered by the Council of the Medico-Psychological Association, and a trustworthy committee has the matter in hand. We hope that their deliberations and consultations with the officials of the Royal British Nurses' Association will result in an open register for every nurse who is qualified to act in relief of human suffering.

The New Divisions.

At the last meeting of the Council, held in Nottingham, a most important and far-reaching decision was achieved. In accordance with the Articles of the Medico-Psychological Association, application had been made to constitute two new divisions for England. These representations were backed by some of the most active and influential members of the Association, and two capable and tried physicians have been named as divisional secretaries. There can be no doubt that the time had fully arrived for this evolution of energy; and the success of the South-Western Division in the hands of Dr. Macdonald will be emulated by Dr. Crochley Clapham in the north and by Dr. Ernest White in the south-east. It is many years since Ireland and Scotland attained the

privileges of carrying on the work of the Association within their borders, and the fact had become so familiar that it was in danger of neglect. Just as the British Medical Association has been vitalised and reinforced by the formation of branches throughout the Empire, so will it be with the Association which has even stronger claims on our support. It is a healthy growth from the parent stem, a natural development in accordance with the best traditions of former days. Meanwhile the Council have appointed a small committee to settle the boundaries of the new divisions, and their report for the current year will, no doubt, place the matter before the Association in detail.

Asylum Water Supply.

We direct the attention of our readers to an important note by Dr. Carlyle Johnstone on another page of this issue. There is no question more intimately affecting asylum administration than that raised by the Roxburgh Asylum Board. Apart from the principle established from the legal point of view—the admission that a District Lunacy Board is entitled to promote a Parliamentary Bill, the committee is to be congratulated on having at last obtained a sufficient supply of potable water.

The first difficulty to be disposed of in proceeding to the erection of an important institution is relative to water supply, and it would appear from the careful statement of Dr. Carlyle Johnstone that opinion as to the quantity hitherto generally thought sufficient must be revised. He has come to the conclusion, after the investigation detailed, that the absolute minimum should be fixed at fifty gallons daily for each person resident. This seems, at first sight, a high estimate, for the English Commissioners, as lately as 1892, stated the quantity at forty gallons, while Burdett, in 1891, put it as low as thirty. The point is certainly one which commands serious consideration at present, while so many asylums are being built or enlarged.

PART II.—REVIEWS.

Dreamy Mental States. By Sir J. C. CRICHTON-BROWNE, M.D., F.R.S., &c. London: Baillière and Co., 1895, pp. 32.

The Cavendish Lecture of 1895, under the above title, was read before the West London Medico-Chirurgical Society. It is characterised by the luminous power of expression, the literary finish and breadth of view which distinguish the work of the author.

Sir James takes a comprehensive view of his subject, and brings to its illustration many evidences of cultured reading, as well as the careful observations of a wide experience, thus arraying systematically, phenomena which have not hitherto received such collective consideration.

Reminiscence is described by the author as the simplest form of dream state, and the recognition of it in the writings of Scott, Dickens, Rosetti, Holmes, Wordsworth, Coleridge, &c., are quoted, and he points out that in all the writers who attempt to explain it, there is a tendency to regard it as a vestige or echo of a previous existence.

The suggestion is made that the doctrine of human pre-existence may have originated from unaccountable reminiscences, but he limits the medical view, to regarding them as revivals of hereditarily transmitted or acquired states in new and special combinations.

The universality of reminiscence is doubted; the author esteems it as abnormal, and as occurring amongst the educated not earlier in intellectual development than the capacity for entertaining abstract ideas.

The abnormality of reminiscence is strongly insisted on. "There is," he says, "a negative element in the loss of control of the highest centres, and a positive element in the raised activity of other nervous arrangements; a defect of consciousness indicated by vagueness as to present surroundings; an increase indicated by the too vivid revival of former surroundings." He further likens it to a state of memory diving below its accustomed level and bringing to the surface deeply submerged personal annals or even still more unfathomable ancestral traits. The abnormality, however, admits of debate; thus Sir Benjamin Brodie traced a condition of reminiscence, as arising from a distinct impres-

sion in his environment (the identity of a wall paper), and it might be urged that the failure to be impressed by such a condition would correspond to a diminished keenness of sense impression; this might certainly account for the diminution of frequency of its occurrence as life advances; the reverse should rather be the case were it an utter abnormality.

Sir James next proceeds to discuss the dreamy mental states associated with epilepsy, with nitrous oxide inhalation, states of drowning, &c., and in relation to treatment urges the necessity that exists for extended observations on diets of various kinds in epilepsy and allied conditions.

The lecture is full of suggestive thought, and should be read by every alienist physician.

The Physiology and Pathology of the Cerebral Circulation, an Experimental Research. By LEONARD HILL, M.B.
London: J. and A. Churchill, 1896.

This work contains the substance of the Hunterian Lectures delivered to the Royal College of Surgeons in 1895, and is the embodiment of the work done by Dr. Hill as Research Scholar of the Worshipful Company of Grocers, a work carried on during five years. It is the most complete and thorough investigation of the subject with which it deals that has yet been made, alike in its careful examination of the methods and results of previous workers at the same subject, and in the experimental methods employed by Dr. Hill himself; and it deserves careful consideration on the part of all neurologists and physiologists. Dr. Hill has followed the plan that was employed with such fruitful results, in a different department of neurology, by Duchenne of Boulogne. He has first made his own experimental investigations independently, and only after their completion appealed to the literature of the subject—a method which has the merit of yielding the unbiased results of the individual worker.

The great difficulty, in studying the physics of the cerebral circulation, is due to the necessity of making an opening in the skull, and introducing a disturbing factor in the shape of the pressure of the atmosphere. This difficulty has been apparently successfully overcome by means of an ingenious apparatus introduced into the trephine opening, which, while

completely closing the aperture, enables the intra-cranial pressure to be accurately estimated.

By means of this apparatus Dr. Hill has shown that the brain pulsates (1) through the ebb and flow of the cerebro-spinal fluid (during its diastole the occipito-atlantal and other vertebral ligaments yield, during its systole they recoil and force the fluid back into the cranial cavity); (2) by the compression of the cerebral veins by the entrance of the arterial blood into the arteries.

In Chapter II. the physiology of the cerebro-spinal fluid is discussed. Dr. Hill rightly draws attention to the fact, that the large sub-arachnoid cisterns which are demonstrated by Key and Retzius are only potential cavities, that as a matter of fact they are not distended by fluid as the coloured injections of these observers would lead us to believe, but that the brain fits the dura much as a finger fits a glove. Dr. Hill also points out that the veins and venous sinuses and not the lymphatics are the principal channels of absorption of the cerebro-spinal fluid, and that this absorption commences as soon as the pressure of this fluid begins to exceed that in the veins.

As regards the cerebral circulation (Chapter III.) Dr. Hill's observations lead him to support the so-called Monro-Kelly doctrine, that the quantity of blood in the brain varies little. A valuable criticism is given of the various methods of inferring the quantity of this blood either by post-mortem examination or by experiments made during life. Dr. Hill's method involves the estimation of the arterial and venous pressure, the tension of the cerebro-spinal fluid at the occipito-atlantal ligament, of the blood in the Torcular Herophili, as well as the brain pressure at the vertex—in fact an observation of all the possible variable conditions. Dr. Hill confirms the statement of Gulland and others that there are no vaso-motor nerves in the cerebral arteries—a result which, if it will bear further examination, must greatly influence our views as to the cerebral circulation; but which, when one considers the rich supply of fibres that enter the cranial cavity with the carotid arteries, one finds difficulty in accepting offhand. The vascular cerebral pressure is more dependent on the state of the veins than on that of the arteries. If the venous pressure is raised the tension within them will rise, while that within the arteries will fall. Conversely a fall in venous pressure will be compensated for by a rise in arterial pressure; but Dr. Hill considers that

this result is brought about independently of vaso-motor nerves.

It will follow, therefore, that a rise of arterial pressure will quicken, and a fall will slow, the flow of blood through the brain, and that arterial spasm and arterial hyperæmia will not affect the pressure materially. The great factor in the cerebral circulation is, however, the state of the vessels controlled by the splanchnic nerves.

Special consideration has been given to the influence of anæsthetics, such as chloroform and ether, and to drugs, such as curari, morphia, and amyl nitrite. With reference to the cause of death by chloroform Dr. Hill takes up a position strongly antagonistic to the findings of the Hyderabad commission, maintaining that the primary danger is failure of the cerebral circulation, so that the respiratory centre is not supplied with blood. Hence the danger of administering chloroform in the erect position. Shock is also shown to be due to a fall of the blood pressure in the abdominal vessels, whether the result of chloroform, asphyxia, operations, etc., and to a consequent anæmia of the brain. The dilatation of the abdominal vessels deprives the latter of its proper supply. This will be the greater the more erect the patient is. Hence the value of the treatment by position and by compression of the abdomen.

The influence of the force of gravity and of the compensating effects of the splanchnic vaso-motor mechanism are very clearly and succinctly stated in a series of twenty-four sentences. When the abdominal vessels are dilated then the blood drains away from the brain and heart. The mode of combatting this resulting position and vaso-motor paresis, by raising the feet and compressing the abdomen, and the precautions, necessary, in doing so not to over distend the heart, deserve to be carefully studied in the original work. We have not space to do more than draw attention to them.

Two chapters are devoted to cerebral anæmia and to the metabolism of the brain respectively. In addition to mechanical causes, such as occlusion of arteries or venous sinuses, and hæmorrhage from a large artery, the most important causes of cerebral anæmia are shown to be vaso-motor paralysis, especially of the splanchnic area, and the upright position of the body. The importance of this fact is insisted on in the treatment of syncope and in the production of sleep. Like Mosso, Dr. Hill considers sleep to be due to arterial anæmia and venous hyperæmia of the

brain—hence the value of the absence of all stimuli of the vaso-motor centres, of the dilatation of the splanchnic arteries, and, as producing cerebral venous hyperæmia, of the horizontal position.

Dr. Hill differs from Mosso in regarding the metabolism of tissue in the brain as being inactive compared with that of muscle.

In the concluding chapter, on cerebral compression, Dr. Hill shows, experimentally, that an increase of intra-cranial pressure in any one part is not transmitted equally to all parts of the brain by the cerebro-spinal fluid; that the falx cerebri shuts off the two hemispheres from each other, and the tentorium cerebelli shuts off the cerebellum from the hemispheres. When fluid is injected into the subdural space it presses the hemispheres against the tentorium cerebelli, and prevents fluid from escaping into the posterior fossa, and also wedges the medulla into the foramen magnum so as to block it up. On the other hand a local fluid pressure on the bulb forces the cerebellum upwards, so that the fluid can escape upwards into the posterior fossa, and downwards into the vertebral canal. The symptoms of compression are due to cerebral anæmia, and are most serious when this anæmia affects the bulb. This is more easily produced by a local solid pressure on the bulb itself than by a fluid one, and by a pressure equivalent to the capillary pressure within the bulb. Therefore a smaller solid body in the bulbar or cerebellar region will prove fatal than in the cerebral chambers. Symptoms of compression may be removed by making a sufficiently large opening in the skull to allow the brain to expand, or sometimes (especially in cases of tumour) by depleting the brain by lowering the blood pressure through prepurgation, and dilatation of other vascular areas by hot applications and mustard poultices and so forth.

What has been said will afford some indication of the nature and value of Dr. Hill's laborious research. Its value appears to us to be as great from the point of view of the physician as from that of the physiologist. For both, the results arrived at as regards the distribution, amount, and absorption of the cerebro-spinal fluid; the effects of cerebral anæmia and of vaso-motor paralysis in syncope, chloroform narcosis, and in compression, seem to us to specially warrant careful consideration.

A Contribution to the Study of Acute Delirium, with especial Reference to its Bacteriology. Report of a Case. By WARREN L. BABCOCK, M.D. (*The Medical Record*, Aug. 1, 1896.)

Dr. Babcock observes at the outset of his article that the term "Acute Delirium" is applied by various observers with varying degrees of freedom, so that whereas one asylum will show only a small percentage of cases amongst its admissions, in another the proportion will be, in comparison, considerable. For such divergence no explanation is forthcoming, if the personal factor of the observer be omitted from consideration. We are not unfamiliar with like discrepancies in this country. Dr. Babcock truly observes that, "to the critical observer this contradiction of statements signifies that our knowledge of the exact nature of acute delirium is very meagre." To many it is about as difficult to distinguish between acute delirium and what Dr. Babcock terms "hyperacute mania" as it is to mark off influenza from a severe cold with evident contagious characteristics; and for a like reason, namely, ignorance of the precise nature of the diseases, acute delirium and influenza. Nevertheless the diagnosis in these respective instances is freely made, with a confidence which is bewildering to the critical-minded. Dr. Babcock refers with approval to a recent contribution by Dr. H. C. Wood, entitled, *An Excursion on Acute Delirium*. This writer, it appears, divides acute delirium into acute periencephalitis (with subdivisions "septic" and "idiopathic," the former due to the action of septic organisms on the brain, the latter depending on "emotional strain" or "functional excitement"); and, secondly, "an acute affection primarily centred in the ganglion-cells, but without lesions that can be demonstrated by our present process." Presuming that the title of the first variety (we leave aside the question of the etiology of the "idiopathic" subdivision, as demanding more critical consideration than space permits) is based upon pathological observation, we do not understand upon what evidence we are asked to believe in the pathological basis of the second of Wood's divisions.

Dr. Babcock's studies have been confined to an effort to determine the alleged bacterial nature of the disorder, acute delirium. The following germs have been found post-mortem by various observers in the cerebro-spinal fluid in

cases of acute delirium, but none is constant: pneumococcus, staphylococcus pyogenes aureus and albus, bacillus pyocyaneus. In addition, there is the bacillus found in the cerebro-spinal fluid by Raseri. Of these the pneumococcus appears the most significant. In Dr. Babcock's case the cerebro-spinal fluid was examined bacteriologically during life. Whilst clinically the case was one of acute delirium, pathologically the condition was an acute periencephalitis. The only history given is that the patient had no insane or neurotic relatives; he used alcohol and tobacco to excess; he had influenza some two months before admission. No mental symptoms were noted until ten days before admission. Patient was a painter by trade. The question of lead-poisoning is not referred to, and presumably was without bearing. A survey of the symptoms shows nothing specially noteworthy until the 29th day, when the note made was: "No subsidence of delirium; resistive about food; febrile symptoms prominent, resembling typhoid fever. Head slightly retracted, pupils greatly contracted; patient stupid and dull. Symptoms point to increased intra-cranial pressure. Operation of lumbar puncture decided upon." The operation was performed, an aspirating needle being inserted into the subdural space between the first and second lumbar vertebræ.

The author states that the cerebral pressure was evidenced to be high by the flow of fluid, which at the start was 44 drops per minute. The normal rate of flow is given at 6-10 drops per minute. Seventy-three c.c. of clear exudate was collected. The operation was followed by temporary improvement in the patient's state. He later relapsed, and passed into a state of coma. Death occurred on the 46th day. Bacteriological examination of the fluid (cer.-spinal) removed during life showed the micrococcus pneumoniae crouposæ in large numbers, with an occasional streptococcus pyogenes. The same coccus was found in blood smears from the spleen. The author had no facilities for cultivating the germ; unfortunately rabbits inoculated with it showed symptoms of mild septicæmia. But other rabbits, inoculated with fluid from a puncture made eight minutes after death (which fluid was turbid, and showed a greater number of the two germs previously mentioned, especially the streptococcus, also pus-cells—these changes in the fluid after the first puncture might conceivably point to deficient precautions on that occasion), rabbits so inocu-

lated showed much more severe symptoms of infection. An examination of their blood revealed the same germ that was found in the spinal exudate in the other cases (micrococc. pneumoniæ).

As the author observes, "The subject needs further investigation by re-inoculation and culture experiments with the fluid obtained by puncture, before the identity of the germ can be established." In our experience cases of acute delirium are grave amongst the class of patients from which county asylums draw; and in hospitals for the insane, and institutions which receive patients from the upper classes, autopsies are but rarely obtainable. A further drawback to the elucidation of the malady is occasioned by the lack of bacteriological knowledge and equipment at asylums, with very rare exceptions. When the system of acute hospitals in connection with asylums, with well-trained staff and adequate laboratories, is established, we shall be more justified, as far as this country is concerned, in looking for more precise information upon many of the more recondite problems of insanity, and amongst them that of the pathology of acute delirium.

Des Variétés Cliniques de la Folie en France et en Allemagne.

Par J. ROUBINOVITCH. Avec une préface de M. le Professeur JOFFEY. Paris: Octave Doin, Editeur. 8, Place de l'Odéon; 1896; pp. 276. Prix 5 fr.

In these twelve lectures, delivered at the Asile Sainte-Anne, Dr. Roubinovitch has made the praiseworthy attempt to compare the views of the leading alienists of the French and German schools concerning certain forms of insanity and its classification. So long as we are not in possession of exact knowledge concerning the intellectual functions of the brain in health, on the one hand, and of the exact pathological changes corresponding to alterations in these functions, on the other hand, we cannot hope to devise a scientific classification of insanity free from criticism; but a perusal of this book shows, not only that we are not within measurable distance of this ideal, but that in the case of French and German writers on insanity, for instance, there is a wide divergence of views, even as to the basis on which a convenient clinical classification should be founded. Dr. Roubinovitch shows, from an analysis of a

number of German observations, that it is not a question of any difference in the nature of the mental affections which exist in the two countries that explains the differences in terminology and classification which are found in French and German works; but a different conception of mental pathology lies at the bottom of it all. They are in perfect accord as regards their facts—the symptoms of the cases; but while French authors lay stress on anatomical and clinical features to differentiate the varieties of disease, German authors base their classifications almost entirely on the state of physical and psychical development of the brain—quite an unstable basis of appreciation with our present knowledge.

Even in the early part of the century, says Dr. Roubinovitch, in France, the clinical principle is the dominant one among alienists; while in Germany it is the animistic and religious principle which guides them. “In no branch of medicine, perhaps, more than in mental affections, do we notice the difference between the mental tendencies of the two races: the French eager for the clear, the definite; the German searching for vague and general explanations, but not void of grandeur, we must confess.”

In this connection a comparison of the classification of Dr. Magnan on the one side, with those of Krafft-Ebing and Schüle on the other, is full of interest. Faithful to the traditions of the French school of alienists, Magnan is guided in his classification by the three following principles: Clinical evolution, etiology, pathological anatomy; in short, he relies as far as possible on facts, and his classification is eminently practical (*vide* p. 36). On the contrary, Krafft-Ebing and Schüle pretend to base their classifications on a single principle—the state of development of the brain from the organic and psychical point of view; the consequence is that these, and German classifications generally, are complicated, and in an examination of their divisions and sub-divisions we are conscious that but little appeal is made to the clinical side of disease. When we find Schüle dividing the “psycho-neuroses” into two great divisions, according as they affect the *valid* or the *invalid* brain, we must admit that a pure psycho-physiological hypothesis is introduced as a basis of classification. How do German alienists determine whether a given lunatic has a valid or an invalid brain? The proof that this doctrine is fraught with uncertainty is that we find two of the most competent

German alienists placing primary dementia, for example, the one among the insanities affecting the *valid* brain, and the other among the insanities affecting the *invalid* brain. However, one must add that French authors are not free from a similar reproach; mental degeneration plays a very large part in their conception of mental pathology, although it is becoming a more and more indefinite expression.

Dr. Roubinovitch devotes the greater part of his book to a consideration of those forms of insanity which occur in various German classifications under different names, with a view of determining to what forms they correspond in French terminology, and endeavours to show how unsatisfactory it is for purposes of reference that corresponding terms are not in use among French and German authors.

An examination or an analysis of cases placed under the heading of "Curable Primary Dementia" (Krafft-Ebing) shows that the only feature which they really possess in common is a condition of more or less pronounced atony, a more or less marked diminution of the psycho-motor functions of the patients. But, as Dr. Roubinovitch remarks, this atony is a symptom met with in a host of morbid conditions. It becomes necessary, therefore, for a foreign author to analyse each case labelled "Primary Dementia" by German authors; for as regards some of them the diagnosis of the French alienists is melancholia with mental confusion in a degenerate; as regards others—stupor, &c., Dr. Roubinovitch's diagnosis of one case of Krafft-Ebing's (Goub, æt. 29 years, &c.) is "Cerebral shock (traumatic), with transitory enfeeblement of the intellectual faculties, confusion and incoherence of ideas, left facial paralysis, paraphasia, word deafness, and psychical blindness"—obviously not what we should consider in England as a case of "primary dementia." Dr. Roubinovitch therefore concludes that "the morbid conditions classified by certain German authors under the general heading of 'Curable Primary Dementia' or 'Stupor' ('Stupidité'), or 'Amentia Stuporosa Meynerti,' present, as regards their symptoms, an extreme variableness."

The same halo of uncertainty or vagueness surrounds the German "*Wahnsinn*." According to Meynert's school and other German authors, "mental confusion" is the characteristic symptom of this affection, and many of the cases correspond to Newington's "delusional stupor." But from the point of view of the French alienist, the cases found under

the denomination of Wahnsinn are not so clearly defined as to admit of their labelling them with some corresponding short name. As a rule, the diagnosis of Roubinovitch is "Maniacal excitement, with hallucinations and occasional mental confusion in a degenerate." Incidentally, one may remark that the expression ". . . . in a degenerate" which we come across frequently in the French nomenclature, is open to practically the same objections as the expressions "valid brain," "invalid brain" of the German authors; for as the famous stigmata of degeneration become more and more numerous with further researches, it will soon be impossible to find an ordinary human being who is not degenerate, let alone a lunatic.

In Krafft-Ebing's classification, under the heading of the Secondary Psycho-neuroses we find "Secundäre Verrücktheit" and "Secundäre Blödsinn." For French alienists secondary verrücktheit is simply a phase of the secondary dementia which follows certain acute mental affections. Nothing could better illustrate the objection to basing any classification of insanity on heredity and degeneracy than a comparison of Krafft-Ebing and Roubinovitch's views concerning the former's patient—Kampf, æt. 28 years (v. p. 149), labelled as belonging to the apathetic form of "Secundäre Blödsinn." For Krafft-Ebing, Kampf has a "valid brain;" but this is what Roubinovitch says: "For us this patient has all the characteristics of a degenerate. His cranial malformation, his timidity, unsociability, his attack of melancholia at the age of 19 warrant this conclusion." Their views even as to what cases should come under the heading of "Simple Acute Mania" ("la manie aiguë franche") are also different. Roubinovitch's conclusion as regards "Secundäre Verrücktheit" and "Secundäre Blödsinn" is that they are steps in the fall or the psychical degradation of the patient, into dementia, and the cases would be labelled by French alienists as examples of early or late secondary dementia.

The eighth lecture is devoted to a consideration of "Katatonia," a subject ably touched upon by Dr. Goodall in Vol. xxxviii. of the *Journal of Mental Science*, but the term, though figuring in some German classifications, has not found favour with French and, one may add, English alienists. And it is difficult to see how authors can be tempted to label their cases Katatonia when such vagueness and variability in the symptoms as given by Kahlbaum and

his warm supporter, Neisser, are considered. Verbigeration, which Kahlbaum looks upon as pathognomonic of katatonia, and flexibilitas cerea and mutism are met with in a number of mental affections, says Roubinovitch; and, when we come to analyse the observations, we find that two of Kahlbaum's cases are simple cases of melancholia; while in others we are obviously in presence of hysterical manifestations. Among the cases published by Neisser, "Ueber die Katatonie," we find quite an olla podrida. Three cases are, says Roubinovitch, hysterical, and one almost certainly a case of general paralysis (*v. notes*, on p. 175). His conclusion is that the advocates of katatonia as a morbid entity seem to have started from the principle that it is sufficient to observe in any case of insanity the presence of one symptom, such as verbigeration, or catalepsy, or stupor, to pronounce a diagnosis of katatonia, without taking the other symptoms into account or the results of a pathological inquiry. On p. 183 a list of some dozen different conditions is given which have been labelled "Katatonie."

Finally, Roubinovitch discusses the Paranoia of German authors, which Krafft-Ebing places among the degenerative psychoses, but which is not so considered by some of them. It includes all the forms of systematised delusional insanity of French authors, and is a most comprehensive term.

The Paranoia originaria of Krafft-Ebing corresponds to what the French would call mental enfeeblement, with systematised megalomania. The acute systematised delusional insanity of Schüle appears to be too comprehensive, for one observation of his amongst others analysed by our author belongs to the group "primary dementia;" and to complicate matters still further, Schüle talks of acute paranoia as Wahnsinn. From the German standpoint cases described under the name of acute or sub-acute paranoia constitute intermediary forms between pure cases of chronic paranoia and typical cases of Krafft-Ebing's Wahnsinn; from the French pathological standpoint they are mostly cases which are described under the heading of delusional insanity of short duration and uncertain evolution, with multiple polymorphous delusions, and occurring among degenerates. The fatal misuse of that term "degeneration," already referred to above, is further illustrated when we consider the question of "periodical insanities;" in most French classifications it constitutes an independent group, having no relation with mental degeneration, but Krafft-

Ebing places it in the category of the degenerative psychoses.

A careful perusal of Dr. Roubinovitch's book cannot fail to be of interest and instructive to students of mental pathology; the task which he undertook was a difficult and arduous one, and he has dealt with it very well.

Dégénérescence et Criminalité. Essai Physiologique, par CH. FÉRÉ, Médecin de Bicêtre. 2nd Edition. Paris: Baillière et Cie. 1895.

This series of essays, which M. Féré contributes to the study of criminology, are not only scientifically valuable, but are distinguished by much practical common-sense. While he affords a due meed of praise to the admirable work done by workers of the Italian school in the domain of criminal anthropology, he demurs to many of their conclusions. The introductory chapter is devoted to the consideration of various physiological problems, peripheral excitations, etc., which affect the functioning of the brain, and which have a more or less direct bearing on the psychical characteristics of the criminal. He regards criminality as essentially hereditary, and concludes that it is often associated with physical and psychical signs of degeneracy, and also that criminality and degeneracy have often a common heredity. In these views he agrees with Morel. The author is particularly critical in regard to the alleged connection between atavism and crime, which he thinks is purely hypothetical. He does not lay much store on anatomical configurations, and states that the criminal type is not sufficiently defined nor separated from types which may be regarded as normal. The other chapters deal with the social aspects of crime, and the various methods of treating the criminal. These pages contain much valuable information which will be found useful by all interested in the study of criminality and its relations to mental states.

Periodische Depression Zustände und ihre Pathogenese auf dem Boden der Harnsauren Diathese. Von Professor C. LANGE. Hamburg und Leipzig: Voss, pp. 55.

This is a translation from the Danish by Dr. Hans Kurella, whose extensive knowledge of different languages has so often been of service to medical science. Dr. Lange gives

a graphic description of a form of mental depression which he has found frequent in Copenhagen. Since his attention has been expressly turned to this condition, the Professor has studied it in from 700 to 800 cases.

The patient is weighed down by a feeling of weariness. He dislikes to commence anything, and takes an interest in nothing. The state of the male patient is more often characterised by a want of initiative; that of the female by apathy. The lowness of spirits is seldom so intense as to bring the subject into a lunatic asylum. The affection is distinct both from hypochondria and neurasthenia. With the latter condition it is often confounded. Though the general health is enfeebled, Dr. Lange considers that in this dyscrasia the mental symptoms are of more consequence than the bodily ones. The mental depression is not readily guessed from the faces of the patients. The sleep is unquiet; there are bad dreams; the feeling of distress is worse in the morning and passes away in the evening. The melancholy is not progressive, and there are no fixed ideas nor hallucinations.

Dr. Lange considers that the most constant and important bodily symptom in this dyscrasia is the tendency to the deposit of a large sediment in the urine. This occurs independently of the occasional causes which favour the deposit of uric acid. An inquiry into the composition of the blood in this disorder is much to be desired. Boucheron observed that in several patients the presence of murexide could be detected in the saliva, whence he inferred the presence of uric acid in the circulating fluid. Dr. Lange found the same reaction in the saliva of his patients. He tells us that thirty or forty years ago oxaluria, as described by Dr. Golding Bird, was a disease much in vogue. The Danish physician regards this as an incomplete and ill-defined generalisation. Oxaluric insanity was one of the forms in Skae's classification. A description of it, along with phosphaturic insanity, will be found in Clouston's *Clinical Lectures on Mental Diseases*. Lange refers with more favour to the researches of Haig on the uric acid dyscrasia. The presence of earthy phosphates in an exhausted state of the system is a matter of common observation. The general idea amongst British physicians now is to try to raise the tone of health when the urine assumes its normal appearance without any special attention.

Dr. Lange observes that the dyscrasia is most frequently

met with from the twenty-fifth to the thirty-fourth year of life. The depression of spirits often disappears with pregnancy, sometimes to return after lactation has ceased. In old people thus affected there is a tendency to spontaneous improvement. Treatment should be directed to combat the uric acid diathesis.

The pamphlet is written in an engaging style, and is clearly the result of ripe experience.

Suggestion und Reflex. Eine kritisch-experimentelle Studie über die Reflexphänomene des Hypnotismus. (Suggestion and Reflex. A critical and experimental Study of the Reflex-Phenomena of Hypnotism). By Dr. KARL SCHAFER. Jena: Fischer. 1895. Price, 6m. 50; pp. 110; octavo.

In this pamphlet, Dr. Schaffer examines the question whether all the actions of the hypnotised person can be explained by suggestion. According to Bernheim, to hypnotise anyone is simply to provoke a psychical condition in which the sensibility is exalted. On the other side Charcot and his followers have maintained that in some of their experiments results are evolved which cannot be explained through undesigned suggestions. They insist that the precautions that they use are sufficient to exclude the possibility of such suggestions. Although the school of Nancy seems at present to carry most weight, there are still observers who uphold the views of Charcot. They lay much stress upon the reflex contractions which are produced by lightly stroking the skin. Dr. Sigm. Freud, the translator of Bernheim's work into German, has pointed out that, in some cases of hypnotic lethargy, a soft pressure on one muscle, say of the face, or on one of the three muscles of the ear, which so seldom contract during life, is enough to put the muscle into a state of tonic contraction. Dr. Schaffer refers to the important experiments of Högyes and Laufenauer, which have not gained the wide attention which they merited, as they were published in the Magyar language. These experimenters succeeded, in hysterical persons plunged in a deep hypnosis, in producing great rigidity of the muscles in one or both sides through the application of slight stimuli not only to the skin, but also to the special senses, especially to the eye and ear. Sometimes the contracture was on the same side as the stimulus, sometimes it was crossed, sometimes bilateral.

They hold that all of these results are not obtained through suggestion, but some are arrived at through the extreme exaltation of cutaneous or muscular sensibility attending the hypnotic condition. Dr. Schaffer then proceeds to detail his own experiments, which were performed upon two hysterical young women. These are illustrated by six pages of life-like plates taken from photographs, giving twenty-four portraits in various postures. Dr. Schaffer confirms and extends the observations of Högyes and Laufenauer. By throwing the patients into the hypnotic stage he found that he could reproduce contractures, temporary hemiplegia of one or other side of the body, or contractions of special muscles. Suggestion was freely used, for example, to produce deafness or blindness of one ear or eye, which he calls negative hallucinations, but he holds that many of the results can in no wise be accounted for after this fashion; indeed, many of the special contractures which he caused would indicate a knowledge of the functions of different muscles not possessed by these young women. He insists that his ordinary precautions were sufficient to shut out any prompting suggestions, while the results of his stimulations show a directness and constancy which could not be expected from the mere guess-work of the patients. He claims to have made some generalisations which, if confirmed, would be of importance, for example:

1. We always get a bilateral contracture when we apply the stimulus so that it falls upon the same spot in the macula lutea of the right as well as the left eye.

2. When we apply the stimulus to the nasal half of the retina of the right eye and the temporal half of the retina of the left eye, we get a hemi-contracture on the right side.

3. When we apply the stimulus to the temporal half of the retina of the right eye and the nasal half of the retina of the left eye, we get a hemi-contracture of the left side.

Dr. Schaffer holds that these phenomena of muscular rigidity are spinal reflexes. What allows of their occurrence is the diminution of the inhibitory power of the central nervous system. Suggestibility, he observes, is nothing else than the empirical expression of primary associations, and suggestion is nothing else than immediate association. As extreme susceptibility is a cardinal symptom of hysteria it is in no way wonderful that sensory and neuro-muscular excitability is a hysterical phenomenon. Thus suggestion and

reflex are both dependent upon one and the same alteration of the mechanism of association; both represent immediate association with the exclusion of controlling association.

Dr. Schaffer concludes by observing that the results of both the schools of Paris and Nancy are true and correct, and that the apparent antagonism between the two is but an artificial one. Nevertheless, it is plain that the dispute which has been so long carried on will not be smoothed by a definition. Indeed, Dr. Schaffer describes in very clear terms the point of difference, and although he gives much allowance for the play of suggestion, he in reality ranges himself on the side of the school of Paris.

Die Lehre von den Spezifischen Sinnesenergien. Von Dr. RUDOLF WEINMANN. Hamburg und Leipzig: Voss, 1895. Octavo, pp. 96. Price 2 marks 50.

In this little treatise the author deals in an able manner with a subtle question of physiological metaphysics. He begins by a statement of Müller's theory that the different senses only show certain qualities inherent in nerve tissue. Thus the optic nerve when excited into action shows light; this may be brought out either through the usual stimulus applied to the retina or to pressure or shock upon the optic nerve. In a similar way the auditory nerve excited gives the sensation of sound. Neither of these nerves will transmit the sensation of pain, nor will light applied to the ear cause sound, nor the vibration of a wire before the eye produce light. Electricity can be applied so as to stimulate all the senses. Thus outward stimuli do but bring out the affection or energy of the nerve; beyond this we know nothing of the nature or realities of outer things. Long before Müller, Spinoza had observed that the ideas which we have of external bodies rather indicate the constitution of our own frames than the nature of external bodies, and the qualities of the mind were treated by Kant as specific energies just as the actualities of the sensory nerves were treated by Müller. Practically these speculations leave things much as they find them. Nobody believes that the sunshine sees light, or that sound waves hear, or that the fire feels heat, or that musk smells. When Fichte argues that all appearances can be reduced to a modification of sensation, and all sensations to a modification of conscious-

ness, we can see no flaw in his reasonings. The existence of an external world is an assumption, yet it is an assumption which everyone subscribes to and acts upon, and which inseparably pervades all our thoughts and language. No fear of John Müller ceasing to use his scalpel or look through his microscope because he held that they only aroused the qualities of the nerves of sight and touch. His statement of the case, though strong on the side of "subjectivismus," at least called attention to the different kinds of nerves having their own inherent function or modality. The principle was carried further by Young and Helmholtz, who held that there were three kinds of fibres in the retina, severally acted upon by red, green, and violet, and that from the assimilation and dissimilation of these, other colours were compounded. Helmholtz also held that there were three kinds of fibres in the ear to transmit different tones. Some physiologists also advanced that the sensations of heat and touch were transmitted by different nerve fibres. The mere fact that different stimuli are needed to bring out the inherent qualities shows that the stimuli are not forces of the same nature.

Some physiologists have tried to account for the power of electricity to excite the different sensory nerves, by supposing that the production of sounds is owing to contractions induced in the tympanic muscles, and by ascribing the flashes of light in the optic nerve to the production of either oscillation or objective light through the molecular or chemical action of the electric current. They explain the sensation of taste by the decomposition of the salts in the saliva, and the peculiar smell caused by statical electricity by the production of ozone. The author remarks that Müller takes no account of the ends of the different nerves. They are so arranged as to be exposed to special stimuli, and in their central terminations communicate with limited areas which are believed to have more to do with special functions than other parts of the brain. But these localisations were unknown in Müller's time. The experiments of Vulpian and Rosenthal, made thirty years ago, are sometimes cited to show that nerve fibres are mere conductors. These physiologists succeeded in connecting the cut end of the hypoglossal nerve with the trunk of the lingual, the result being that the tongue was paralysed on the same side, but apparently pain could be excited when the nerve below the point of union was stimulated. Dr. Weinmann might also have

taken into consideration the phenomena of "coloured hearing," photisms and phonisms, cases in which the sensation of sound is accompanied by a colour, or the sensation of colour is followed by that of a sound. His arguments that the sensory qualities are produced by the repeated use of the nerves in transmitting the same impressions seem to us vitiated by his neglecting to take into consideration that the nervous substance in new-born animals has not yet received its complete development. No doubt functional power in the nerves can be much increased by use, but surely it cannot be thus acquired. The author, protesting against the exaggerated "subjectivism" of modern physiologists, says that he does not claim to have added anything that is conclusive to the facts of specific energy, and in this respect we do not think that his modesty does him injustice. After all we cannot get behind our sensations, nor determine how much the impressions conveyed by them teach us of what is really without. We have found this pamphlet difficult reading, but much of this is no doubt owing to the obscurity of the subject.

Epileptic Insanity in its Relation to Criminal Law. By Dr. WILDERMUTH, of Stuttgart (reprint); and the same subject by Dr. KIRN, Freiburg in Baden.

These two papers were read to the South-West German Psychiatric Association, at Karlsruhe, and were published in the *Zeitschrift für Psychiatrie*, 6 Heft, lii. Band, along with a report of the discussion which followed. The case of the epileptic comes oftener before our law courts than any other disease which entails mental disorder. The questions which a medical man has to consider are whether the accused actually suffers from epilepsy, whether this is known to have occasioned mental derangement, and whether the crimes laid to his charge were owing to a state of mind produced by the epileptic condition. To the question: Does epilepsy furnish a passport against criminal responsibility? Dr. Kirn replies: Modern psychiatry, which takes its observations not only from asylums but from patients in ordinary social life, cannot adopt this view. Wildermuth thinks that epileptic insanity has such distinct characters that it could be recognised without knowing the antecedents of the patient, or the certain knowledge that he took fits. He distinguished four kinds of epilepsy; the most common

is what he calls true epilepsy, which is the groundwork of the specific epileptic insanities. 2. Toxic insanity from the effects of alcohol, lead, or other poisons. 3. Cortical or Jacksonian epilepsy, in which we do not find the specific epileptic insanity. 4. Reflex insanity following injuries to the nerves, especially to the trigeminus; and, lastly, *polio-encephalitis infantum*, in which fits are followed by hemiplegia, more or less complete, and by idiocy. We are not satisfied with the freedom some medical authors take in labelling their described forms as true and false epilepsy. We remember Lasègue's striking demonstration before the International Medical Congress in London, but his true epilepsy was different from Wildermuth's true epilepsy. Often we can see no real difference between epileptic convulsions and what some writers call epileptiform or epileptoid convulsions. The abuse of alcohol is a frequent cause of epilepsy which often ends in insanity. Equally difficult is it to make out anything distinctive in epileptic insanity. Some epileptics seem to remain unaffected in mind; but in a large number there are derangements which take a great diversity of forms. The fits may occur only during the night, and thus may be difficult to prove. Epileptics are generally flighty and irritable. The disturbance of consciousness after an epileptic attack may consist in stupor or mental confusion, or in a dreamy state lasting from a quarter to half an hour, but sometimes persisting for weeks and months. This is often accompanied by loss of memory. There are rare cases resembling somnambulism in which the patient performs strange actions which he afterwards forgets. In other cases the patient becomes subject to impulsive mania, making sudden and violent attacks, or the fits are succeeded by horrible and grotesque hallucinations. Sometimes there is a species of delirium of a mystical religious character. When the fits are frequent there is generally a progressive mental degeneration often ending in dementia. The beginning is sometimes shown by callousness to reproof and shameless acts of immorality. In considering the question whether the epileptic be responsible to the law, Dr. Wildermuth lays much stress upon the loss of memory of what had happened during the epileptic delirium. He admits that the memory is not always absent after acute epileptic insanity; but in most cases it is much affected. As several speakers noted, this loss of memory after events is a quite different thing from

loss of consciousness. Dr. Wildermuth mentions the case of a young woman admitted to his asylum in a morose and depressed condition. At intervals she would spring from bed saying that she must kill her mother. She had also a feeling that someone was standing behind her, but was so far reasonable as to admit this to be a delusion caused by disease. The patient had never had any epileptic attacks. Dr. Wildermuth thus defines a variety of insanity to which he gives the name of epileptic, in which there are no epileptic fits; it seems to us that, though some forms of mental derangement arouse the suspicion that they are connected with epilepsy, unless the actual occurrence of epileptic fits has been observed, or proved by fair inference, it is rash to call any form of insanity epileptic. Many writers, especially the Italians, assume the existence of what they call "the epileptic equivalent;" they suppose that the ordinary epileptic attacks may be replaced by one of impulsive mania. But the pathological disorder attending an epileptic attack and a maniacal impulse seems to us quite different, and we prefer regarding such fits of fury as post epileptic phenomena. Dr. Kirn is inclined to adopt the view of limited responsibility; but this, though defensible on moral grounds, would scarcely work in courts of law. It is continually repeated that the object of our penal code is to deter men from crime, and that moral indignation against the atrocity of the offence should not be allowed to have any weight. In reality it has both with judges and jury. If the law has to deal with epileptics at all, punishment would need to be more severe than less, so to deter them against further offences. We are sorry space does not allow of our giving further notice of these able papers. Any one who reads them will find himself in some degree prepared for many subtle questions connected with the important subject of the responsibility of epileptics.

Zur Combinirten Verwendung der Narkotica und Hypnotica.
(Reprint from the *Deutsche Medicinische Wochenschrift*,
1896, No. 37).

In a paper under this title Dr. Bresler, of Freiburg in Silesia, observes that our knowledge of the numerous calmatives and hypnotics is not specific enough. Hyoscin, he tells us, has a favourable influence upon the psychomotor centres acting very promptly on mania; opium has a

good effect upon melancholia; the bromides upon epilepsy. Other hypnotics are given with little discrimination. We have departed from the complex prescriptions of former times, nevertheless combinations are often useful. In anæmic and exhausted conditions we should give wine or beer with opium or chloral, the first agents to stimulate the circulation, the second to act upon the brain substance. Narcotics which act quickly should be combined with drugs which have a slower but more continuous effect. Dr. Bresler has found that smaller doses of paraldehyde and chloral combined have not the effect of a large dose of either drug; but opium as a hypnotic goes well with trional or sulphonal. He quotes a sentence from Flechsig's *Gehirn und Seele* that "Poisons given alone do not act simultaneously upon all the centres of sense and association in the same individual." This is perhaps owing to these structures being developed at different periods. The encephalon is developed out of at least a dozen different parts which react in a different way against injuries. Different drugs have not the same action on different parts of the brain.

In another reprint from the *Neurologisches Centralblatt*, 1895, No. 23, Dr. Bresler describes a case of general paralysis in a girl aged 13 years. Up to the year 1894, about 40 cases of general paralysis in persons under twenty years of age have been described, and since then Dr. Middlemass has added five more. The voice was not affected in Dr. Bresler's patient; but the usual lesions were found in the brain after death. Dr. Bresler has also sent us the report of a case of associated deviation of the eye and head.

Die Krankheiten des Gehirns und seiner Adnexa im Gefolge von Naseneiterungen. Von Dr. R. DREYFUSS. Jena, 1896. Octavo, pp. 101. Price m. 3.

In this treatise Dr. Dreyfuss deals only with the acute and chronic inflammations of the nasal passages, as the study of perforating tumours would lengthen the work too much. We do not well know the amount of communication between the lymphatic passages of the nasal mucous membrane and the arachnoid, although we may suppose from observations in animals that such communications exist. As yet we have only succeeded in man in passing an injection from the arachnoid along the sheaths of the olfactory nerves.

Nevertheless from the thin partitions which divide the frontal portions of the brain from the nasal cavities, one might expect that inflammation would often be communicated from the one to the other. This, however, is not the case. Pitt found that out of 9,000 bodies examined in Guy's Hospital, 57 deaths were owing to the communication of suppuration from the internal ear to the brain; but only one from infection of the brain through the nasal passages. This was owing to a large nasal polypus which had caused absorption of the roof of the ethmoid and pressed against the dura mater causing an abscess in the frontal region of the brain. The man died in convulsions soon after the removal of the polypus. Treitel, in 6,000 post-mortem examinations in the Pathological Institut at Berlin, found only three cases in which the inflammation had been communicated from the nasal cavities to the brain. By a very diligent inquiry into the literature of the subject Dr. Dreyfuss has been able to collect a considerable number of cases illustrating the subject which he treats. Adding these to the results of his own experience, he is able to give a completeness to his work, so that those who consult it may be sure that they have the best information available. At the end of the book is an interesting chapter on *Rhinitis acuta perniciosa* (Coryza maligna), in which the author gives some considerations tending to show that this disease may sometimes be the cause of meningitis cerebro-spinalis. In some cases of this disease the diplococcus pneumoniae has been found both under the arachnoid and in the nasal cavities. As Dr. Dreyfuss observes, it rarely happens that in post-mortem examinations a section is made of the nasal cavities.

Zur Geschichte der Irrenpflege. Von Dr. OTTO SNELL. Hildesheim, 1896, pp. 20.

In this paper, read to a learned society at Hildesheim, Dr. Snell gives a historical sketch of the general methods of treatment of the insane. The rational views and practice of the physicians of antiquity disappeared in the middle ages, and were only revived about a hundred years ago. In Christendom the first lunatic asylums were established in Spain. This we owe to the influence of the Arabs. Asylums were built at Valencia in 1409; Saragossa, 1425; Seville and Valladolid, 1436; and Toledo, 1483.

Dr. Snell has made some original inquiries about the treatment of lunatics in lower Saxony, in the fourteenth and fifteenth centuries. In Hildesheim, which was governed by a Bishop, there are some records of lunatics being imprisoned in the ordinary jails and in cellars. The entries about their board indicate that the cost was small. Mad persons were frequently got rid of by the simple process of expelling them across the frontier, which was conveniently near. The persecutions against witchcraft were not nearly so frequent in the middle ages as in times nearer our own. It was after the Reformation that this frightful delusion became so virulent, and it was especially mischievous in Protestant countries, in Northern Germany, Scotland, and Geneva. Under the tortures of the rack, the accused were made to confess and to name their accomplices, so that the judges themselves were astonished at the number of witches. Dr. Snell tells us that at Quedlingburg, in 1589, one hundred and thirty-three sorcerers were burned in one day. At Lindheim, from the year 1640 to 1651, thirty persons, one out of eighteen of the whole population, were burned for witchcraft. In Fulda more than two hundred wretches were put to death for this imaginary crime (1603-1605).

A New Anthropological Review

We have received two numbers of the new *Centralblatt für Anthropologie Ethnologie und Urgeschichte*, edited by Dr. G. Bushan, a serial in quarterly numbers, published at Breslau. It contains a rich collection of observations upon subjects which, though not directly within the scope of our Journal, are so near to it that the new Review is likely to interest many of our readers. A great amount of diligence and learning have been bestowed in collecting the information in these numbers from a variety of sources.

We have for example a resumé of the views of distinguished anthropologists about the signification of the fossil remains found in Java by M. Dubois, which he supposed belonged to an animal named by him as the *Pithecanthropus erectus*. The first authority cited is Sir William Turner, *Journal of Anatomy*, Vol. xxix. He observes that the cranial capacity of the Java skull is probably about 1,000, which is about the same as that of the Neanderthal skull. As far as form goes, the skull, though it has peculiarities, might yet be human. The skulls of Australian women had a capacity below 998. The femur might also be human; but the tooth

is that of a monkey. Manouvrier thinks that the skull might belong to a race of pigmies; from the small size of the internal cavity the intelligence must have been low; or it might have been the skull of an enormous gibbon with an intelligence greatly in advance of all existing apes. This is the view favoured by the finder of the bones.

Upon one feature Manouvrier lays special stress, an elevation of the under and posterior part of the parietal region stretching behind to the superior occipital crest, and in front to the submastoid. This formation is found in the anthropoid apes; most marked in the male gorilla, it serves for the attachment of the muscles of the neck. He does not think that the femur and the tooth belie either hypothesis. Most of the anthropologists cited believe the tooth to be that of a monkey. Dr. Rud. Martin alone holds the tooth to be certainly human, but thinks that it belonged to a younger animal than the skull. He thinks that both the femur and the skull belong to a human type. Along with other anthropologists he shares in the doubts whether M. Dubois' method to determine the cranial capacity from the incomplete skull be trustworthy. Professor Krause thinks that the skull might be that of a large *hylobates* or gibbon. He thinks the femur to be human. Professor Rud. Virchow observes that it is a question whether the fossils were found in pleistocene or the newest tertiary deposits of the pleiocene. The femur might belong to a gigantic gibbon, but is more probably human. The learned pathologist believes the swelling on the bone to be the result of otitis. This would imply a severe illness requiring some care to obtain recovery. On this account he is disposed to think that the owner of the femur belonged to the human family. Virchow points out an important difference between the Java and the Neanderthal skull in the solid ridges round the orbits which are wanting in the latter, but are observable in some crania of apes.

One thing is plain, that there are great diversities of opinion amongst the able anthropologists about the nature of M. Dubois' find. Supposing it to be the remains of an animal never before studied, we might naturally expect peculiarities which naturalists had never before observed in connection.

Head Measurements.

Dr. A. G. Roshdestvenski, of Moscow, has made many careful measurements of the head in 1,600 Russians. He

finds that the relative as well as the absolute size of the head depends upon the growth of the body. This is true of both sexes. The absolute size of the head is greater in big people; the relative size is less. Men attain the maximum size of the cranium earlier than women, men reaching the full size at 20 years, women five years later. This seems a novel result.

Height of Recruits in Sweden.

In a paper on the height of the young men fit for military service in Sweden (Heft 4), Dr. J. Vilh Hultkranz claims that the Swedes are about the same height as the Norwegians. The average height of the young men fitted for military service has increased by about five millimetres between 1887 and 1894. Similar observations have been made in Norway. From recent measurements it appears that the Bosnians rank with the Scandinavians and Scottish as the tallest peoples in Europe.

New Periodical on Education.

We have received the first number of the *Kinderfehler*, a journal for Pedagogic Pathology and Therapeutics, which is published with promises of support from many well-known writers. The acting editor is J. Trüper, Superintendent of the Training Institution at Sophienshöhe, near Jena. The number has 35 pages; the principal articles are "A Group of Children affected by Moral Degeneration," by F. Kölle, of Zurich; "On the Care of Abnormal Children in the United States," by W. S. Monroe, Stanford University, California; and "On the Matricide Coombes," by the Rev. W. D. Morrison. There are interesting reports upon the psychology of children and similar subjects from the literature of Italy, by Paola Lombroso, and from that of France by Lucien Arréat. This promises to be a useful periodical. It will come out in six numbers during the year. It is published at Langensalza, and costs 3 marks.

Progressive General Paralysis. By Professor KRAFFT-EBING. P. 108. Price 2s. 9d. Published by Hölder, Vienna, 1894.

Any clinical treatise by Professor Krafft-Ebing is certain to be worthy of careful study, and the above is no exception to this general statement. In it he gives a clear and concise

picture of general paralysis, and while he has avoided entering on any theoretical discussion of the many interesting clinical, psychological, and pathological questions which inevitably suggest themselves to all who study this most instructive of mental diseases, he has presented the ascertained facts of the disease in a systematic and striking manner. It is thus not a work to which one can turn for much beyond what is generally assented to, and on questions where there is room for differences of opinion he refrains from expressing opinions to which he is himself inclined, though he is careful to state each view impartially, leaving to the reader to decide for himself which is most in accordance with the facts of the case. It may thus be said to be a work which does not belong to any particular school.

His discussion of the subject is most thorough and systematic, and there are few features of the disease which are not touched upon more or less fully. A short history is given of its first recognition as a definite form of mental disease, and to Bayle (1822) is assigned the credit of placing it for the first time on a secure clinical basis. The various views which have since then been entertained regarding its position as a specific disease are also touched upon. Then follows a definition, based chiefly on clinical symptoms, which does not differ essentially from that given in most treatises in this country. The co-existence of mental and motor symptoms is duly insisted on. A short description of the symptoms and course of the disease follows. The three stages which usually mark its progress are described, the features characterising the first stage being specially graphic. The description of the second stage affords an opportunity of grouping the cases clinically under three heads—simple paralytic dementia, the maniacal and the melancholic form. The author's experience of over 2,500 cases seems to be somewhat similar to that in this country, which is to the effect that in recent years a greater number than formerly belong to the first class, at the expense of the second. He does not, however, suggest any explanation of this. The next part of the subject dealt with—the pathological anatomy—is the least satisfactory of all. Only five pages are devoted to this, perhaps the most important of all the questions which arise in a consideration of this disease. It is practically certain that no secure basis of classification is possible apart from a pathological one. It may be urged on behalf of the author that the present position of our

knowledge did not justify him in laying stress on any conclusions founded on it, but, on the other hand, it may be said that the very imperfection of the data furnishes a strong reason for doing all that is possible to stimulate interest in it. The author, however, does not profess to speak on his own authority in this department of his subject, and this may account for the small amount of space he devotes to it. The atrophic and inflammatory theories of the morbid process are succinctly and impartially described, and so far as they go the description is satisfactory.

Under the heading of Etiology the various causes are divided into predisposing, individual, and accessory. Under the last the influence of syphilis on its production is discussed, and his verdict is practically one of "Not proven." Hougberg's* recent statistics are fully quoted. The special symptoms are then considered under various headings, and after a short description of the course and duration, an important chapter follows on the import of the diseased process. In it he discusses the various theories which have been advanced to explain the nature of the disease, but is unable to say that any one is wholly satisfactory. It is possible, indeed it is practically certain, that there are various forms of the morbid process, as there are in Bright's disease for example, and order will arise out of the present unsatisfactory state only when the pathological facts are placed on a rational basis, as has been done in the disease mentioned. It is to be hoped that the recent activity in pathological work in asylums may lead to some such fruitful result. A short review of the diagnosis, differential diagnosis, prognosis, and treatment brings this interesting work to a close. Praise is due to the extensive and complete literary references which are appended.

Emile Zola. Par EDOUARD TOULOUSE. Paris : Société d'Éditions Scientifiques, 1896. Pp. 285. Price, fr. 3.50.

Dr. Toulouse of Sainte-Anne, whose excellent work, *Les Causes de la Folie*, we reviewed last year, has in the present volume brilliantly commenced a work of much greater originality and one beset with many difficulties. On the title page we read that this book, which contains a general introduction, as well as a detailed study of the famous

* *Allg. Zeit. f. Psych.*, Vol. I., p. 546.

novelist, is the first of a series which will embody a "Medico-psychological investigation into the relations between intellectual superiority and neuropathic conditions." Among the distinguished persons who have lent their *corpora vilia* for the purposes of the inquiry are Rodin, Puvion de Chavannes, Dalou, Berthelot, Saint-Saens, Alphonse Daudet and Lemaître—that is to say, nearly all the chief contemporary personages in French art, literature, and science, though it must be added that not all of these have given permission for the publication of the results. In our own country—partly, it may be, from excess of artistic vanity on the one side, from lack of initiation on the medico-psychological side, from some fear of ridicule on both sides—such a scheme would probably be hopeless. Therefore Dr. Toulouse's skill and courage deserve all due recognition; he has certainly opened up the path by which alone we can reach any reliable knowledge of the nature of genius, and now that he has taken the first step there will be many to follow who before feared to venture.

After some hundred pages of general introduction, in which the nature of the problem is stated with commendable caution and the methods of procedure discussed, we are introduced to the novelist who by his glorification of medical and psychological science was doubtless considered worthy of priority at the hands of an alienist.

Dr. Toulouse has been singularly fortunate in the assistance he has received in carrying out his task. It is evident, from the elaborate and fatiguing experiments here recorded, that M. Zola himself has placed a very large amount of time, trouble and complacency at the investigator's service; he has also read the proofs of the book and sanctioned its publication. But Dr. Toulouse has, in addition, obtained the assistance of a large number of eminent scientific men for special parts of the task: Manouvrier for the anthropology of the head, Bertillon for the general anatomical characters, Galton for the finger prints, Sauvineau for vision, Passy for sense of smell, Henry for dynamometric pressure, Bloch for cutaneous sensibility, Bonnier for hearing, Robin and Monfet, independently, for examination of urine, Philippe for reaction time, Crépieux-Jamin for handwriting, etc.; while the subject's doctors (Robin and Huchard), by permission of their patient, have been of very great assistance, as also has his dentist (Galippe). It is evident at the outset that the author has very skilfully fortified his position.

The method Dr. Toulouse has decided to adopt closely resembles that usually followed in taking down a case; it seemed to him the simplest plan, and the best to follow in a work intended for medical readers. The first chapter is therefore devoted to the family history, in which the chief points brought out are the racial mixture (Italian, Greek, and French), the disparity of 28 years in age of parents (to which the author attributes no importance, as the father was only 44 at his son's birth), and the gouty and neurotic temperament of the mother, who was throughout life subject to convulsive attacks, apparently of hysterical nature, and was very emotional. In the next chapter, dealing with the personal history, we learn that the novelist was delicate from infancy, that the acquisition of speech was difficult, and is not indeed even now without some defects, while during early boyhood he remained pale and slender, afterwards becoming robust with a marked tendency to obesity, which he is now only able to keep in abeyance by strict temperance and constant attention to diet. Puberty appeared in the fourteenth year, and the sexual instinct, we are told, has always been accompanied by "a certain timidity." After an adolescence during which he suffered greatly from poverty, at the age of twenty the novelist became subject to severe neuralgias in intestines, bladder, and thorax; and to some extent he still suffers in this way, especially from what Huchard has diagnosed as "false angina pectoris in a nervous subject." Micturition also is necessary at very frequent intervals, and digestion is only kept in a fairly satisfactory state by regimen. The general anatomical condition is, however, regular and robust, and there are no stigmata of degenerescence. There have always been involuntary tremors of the hands, exaggerated during voluntary action, so that in lifting a full glass it is frequently spilt.

Cutaneous sensibility is highly developed, somewhat more so on the right side; sensibility to pain is also excessive. Myopia has existed since the age of 16. Colour vision is very good. There is a tendency to spontaneous luminous sensations in the gloom of evening. There are similar faint hallucinations of the sense of hearing. The sense of smell plays a large part in Zola's life as in his books; it is not *quantitatively* developed to an unusual extent, but he is very observant of odours, and has an excellent memory for them. In this respect he resembles perfumers; every

object to him has its own odour. The sense of taste is normal.

It is impossible to summarise all the tests here recorded, but there is interest in referring to certain morbid obsessions of which (like Dr. Johnson, and, it seems, George Borrow) M. Zola has been the victim for many years, ever since he was 30. He suffers from morbid doubts, and also from arithmomania. He counts the lamp posts, the stairs, the numbers on the doors, and especially the numbers of cabs, which he adds up, each figure being regarded as a unity. Before going to bed, also, he feels compelled to touch the same piece of furniture, or open the same drawer, a certain number of times. He is also superstitious about certain figures, and if the number of a cab, when added up, comes to one of these figures he will not take it; for a long time the multiples of 3 seemed best to him; now he is reassured by the multiples of 7. Sometimes at night he opens his eyes seven times to assure himself that he is not about to die. M. Zola recognises the absurdity of these *manies*, as he himself calls them, but finds it a satisfaction to give way to them; it must be noted, however, that with an effort of will he can resist them without any great struggle or suffering.

In summing up, Dr. Toulouse remarks that M. Zola is certainly free from all gross forms of nervous and mental disease. "His physical and psychic constitution is in fact full of strength and harmony," though the nervous system is in some respects hyperæsthetic and from this point of view, to use a vague current word, unbalanced. Even the morbid impulsions are parasites not affecting the intellectual personality, and the author remarks that he has rarely seen such fine mental stability even in a healthy subject. There is a strong will and power of intense attention, great educability, a remarkable absence of suggestibility (so that it was impossible to deceive him in the tests), clear conceptions, sure judgment, orderly methods of work, and a singular power of utilising all his intellectual means.

"At the same time," Dr. Toulouse observes, "it cannot be denied that M. Zola is a neuropath, that is to say a man whose nervous system is painful." He is inclined to attribute this to constant intellectual labour affecting a nervous system predisposed by heredity.

The book is well illustrated by photographs, some specially taken for the purpose (including photographs of the hands),

representation of the visual fields, reproductions of the handwriting, and numerous diagrams illustrating the results of the tests employed.

Psychologische Arbeiten. Herausgegeben von EMIL KRAEPELIN. Bd. i., Heft. 4. Leipzig: Engelmann. 1896. Price, mk. 5.

The previous parts of this important series of studies have already been summarised in the Journal. Its importance lies in the fact that Professor Kraepelin (closely followed by Dr. Cowles, in America) has been the first from the psychiatric side to recognise the intimate bearing of experimental psychology on the alienist's work. It is easy to criticise such work, to point out the difficulties of investigation, the absence sometimes of any obvious relation between experiments on normal persons and the alienist's immediate practical work, which must be carried out in accordance with the method of "small profits and quick returns." Much the same objections were, until lately, brought against the Germans when they first set up well-equipped laboratories in their manufactories and installed chemists to work at what they would. But the immense success which has followed that policy has now justified the Germans in the eyes of the whole world. It is a German who has carried this same policy into the asylum, and we shall probably have to admit that Professor Kraepelin is right, and that here also progress in pure science makes for progress in applied science. It is an astonishing and unaccountable fact that in English asylums, where the anatomical study of the dead brain is well established, the exact study of the living brain is often almost ignored; and it is satisfactory to note that one of the chief investigations in the present volume is by an English worker, Dr. W. H. R. Rivers.

Whatever may be thought of the results obtained, it can scarcely be questioned that the subjects dealt with in this volume—the action of bromides, the influence of alcohol on work, and the relation of fatigue and repair—are practical subjects not wholly without interest for the alienist. The first and longest is an elaborate study of the psychic action of bromides by Arnold Loewald, who desired to investigate the nature of the action of bromides in epilepsy and neurasthenia. Bromide of sodium was exclusively used, seldom in

larger doses than 4 grms., and 115 experiments were carried out, 58 with and 57 without bromide, chiefly on the experimenter himself. The experiments, which need not here be detailed, included various reactions, the addition of figures, the learning of nonsense syllables, muscular fatigue with the ergograph, etc. The general nature of the results is clear, though at the first glance it seems in some respects contradictory. It was found by numerous experiments that even in small doses the bromide exerted a very distinctly unfavourable influence on learning figures, while rapidity of speech, however, remained unaffected. On the other hand the remarkable result was reached, that the learning by heart of nonsense syllables was actually favoured by the bromide. An attempt was made to obtain experimentally the psychic condition which clinical experience shows to be favourably influenced by bromides; this was achieved by learning nonsense syllables—always a trying task, requiring much patience and self-control—while another person endeavours to distract the experimenter's attention by reading aloud; here again the bromide induced an increased capacity. It was also instructive to learn that while simple learning of figures was impeded by bromide, the same process, when carried on under the disturbing influence of reading aloud, was greatly favoured by the drug. It was found on the whole that bromide (in this respect wholly unlike alcohol) really has a very specific action on psychic processes; many mental processes remain unaffected; others are impeded, others actually rendered easier. The explanation of this is to be found in the fact that all the mental operations which were rendered easier by bromide were those accompanied and more or less inhibited by discomfort,—the painful, unpleasant, unsatisfactory mental exertions. It is not on every increase of central motor excitement, but on those associated with feelings of discomfort, that the bromides exert a favourable influence by removing the inhibitory discomfort, a result which gives greater precision to the rougher results of clinical experience.

The following study by Ernst Römer deals mainly with methods and apparatus, and is succeeded by an investigation into the influence of alcohol on practical work by Dr. Gustav Aschaffenburg. Four compositors in the printing office of a local newspaper gave their services for the purposes of this experiment; they were all experienced workmen, all accustomed to alcohol (though for this occasion

they gave up its use, together with that of all other stimulants), and to insure uniformity they only composed from printed matter. Alcohol was given (in the form of 200 grms. of a Greek wine, Achaia, containing about 18 per cent. spirit) on alternate days of the experiment. With a single exception the work was always worse, and often very markedly worse, under the influence of alcohol; the best work on the days on which alcohol was given was inferior to the worst on the other days on which no alcohol was given.

The concluding study by Dr. Rivers and Prof. Kraepelin deals with experiments on himself, by the former, in elucidation of the relations of fatigue and repair. The experiments were so arranged that equal periods of similar work were followed by pauses of varying length; the time taken to recover from fatigue could thus be estimated. The work chosen was the adding up of figures. Two series of experiments were carried on, in the first of which the pauses extended over half an hour, in the second over an hour; in both the work lasted for half an hour at a time. The experimenter led a regular life, and took no stimulants. The chief result of the experiments (of which an account has already been given by Dr. Rivers in this Journal) is to show that even for a capable adult the fatigue of half an hour's work is very soon not compensated by the same period of rest, and even double that period fails to effect complete repair. In the summary of the results various judicious observations are made concerning their significance. It is pointed out that all law-givers and founders of religion have ordained rest-days and holidays, and that, while there are certainly great individual differences, we do not sufficiently allow for these, especially in education, for which the study of the phenomena of fatigue possesses great importance.

The Mental Development of a Child. By KATHLEEN CARTER MOORE. Monograph Supplement to *Psychological Review*. Pp. 150. Price 1 dollar. London: Macmillan. 1896.

The psychological observations on infants made by Darwin, Preyer, Perez, etc., suffer from the fact that they were necessarily not the outcome of close and continuous observation of children, and consequently, as now seems probable, the date of the apparition of the various mental phenomena has

been fixed at too late a period. This elaborate monograph is solely devoted to Mrs. Moore's close and careful observation of her own baby up to the end of the second year. Mrs. Moore considers that her baby may be considered as in all respects an average infant, but although evidently well-equipped, psychologically, for the task, she wisely refrains either from dealing with the results of other workers or from drawing conclusions from her own results. The observations begin from the moment of birth (during the first few days after birth Mrs. Moore was assisted by her husband), and the observations were therefore recorded without a break. No attempt was made to develop the child precociously, and even definite experiments were mostly excluded; a few simple experiments which had been devised were soon abandoned. The value of Mrs. Moore's work lies in its careful and detailed observations of the infant's natural development, and these observations are specially detailed in reference to points which have been usually neglected; thus the gradual evolution of the child's attitude towards the breast is minutely noted, as is also his habit of thumb-sucking. It is impossible to summarise the results here recorded, but numerous tables render them easy of reference. It is evident that there is here a great psychological field in which women may do admirable work—a field, indeed, which mothers alone are adequately equipped to work in—and Mrs. Moore may be congratulated on her labour of science and love, which may perhaps be considered as marking an epoch in child-study.

Le Déterminisme Biologique et la Personnalité Consciente. Par FÉLIX LE DANTEC. Paris: Alcan, 1897. Pp. 158. Price, 2fr. 50.

M. Le Dantec, who is the author of a *Théorie de la Vie*, writes clearly and vigorously, and in this little volume strives to show, by a brief summary of the facts of animal life from the amœba to man, that consciousness and the whole psychic life are unimportant epiphenomena; "throughout biology there is no mysterious intervention of immaterial principles; *the epiphenomena are inactive witnesses*, and their study is absolutely useless for that of the phenomena of life." This strictly biological standpoint is maintained throughout, and except as a sermon on humility the book is not likely to be of much value to the psychologist.

Fear. By ANGELO MOSSO. Translated from the Fifth Italian Edition by E. LOUGH and F. KIESOW. Longmans, Green & Co. 1896. Octavo; pp. 278. Price 7s. 6d.

This work is very admirably translated, the English being clear and having no idiomatic evidence of its origin. The work is written in a popular style and with an avoidance of technical language. In spite of this it is rarely obscure.

The author indulges in a good many digressions of a somewhat sentimental kind, but they tend to strengthen the interest in the work. This consists of a very systematic consideration of the physiological effects of fear as affecting the circulation (with the description of the professor's well-known "balance table"), the respiration, the voluntary and involuntary muscles, etc.

Mosso considers that Darwin over-estimated the influence of the "will" in the production of expression, and advances a number of cogent arguments in support of his contention.

He is not contented moreover with the origin of movements of expression as propounded by Spencer and Darwin, and after considering the phenomena of cataplexy (p. 171), says, "We must admit that not all phenomena of fear can be explained by the theory of selection. In their extreme degrees they are morbid, indicating an imperfection of the organism."

Professor Mosso incidentally expresses the opinion, that many persons die in hospitals from fear, who would recover if treated at home.

After considering the various maladies produced by fear, he adds a chapter on education, in which he says that "the greater the advance in science, the greater should be the authority of the physician in education." He advocates that the same methods should be followed in education as in the teachings of science, and urges that the force of authority can never be compared in efficacy to that of conviction.

He undoubtedly advocates teaching by reason rather than by rod.

The facts and arguments used to illustrate his subject are familiar and need no comment; nevertheless the book is interesting and suggestive. It is worthy a place on the shelf of the alienist physician, and will in all probability find a considerable number of readers amongst the general public, to whom it is more particularly addressed.

The Mental and Nervous Element in Disease. By T. S. CLOUSTON, M.D., F.R.C.P.E.

The above is the title of the address given by Dr. Clouston when he assumed the Presidency of the Royal Medical Society of Edinburgh in the Session 1895-96. Very naturally he chose a subject on which he could speak with unsurpassed authority and experience, and out of it he made much that was very valuable to those who, like most of his hearers, were setting out in professional life, and much that is instructive and suggestive to those who are well on their way.

The text was set out in the following principle, "The brain cortex, and especially the mental cortex, has such a position in the economy, that it has to be reckoned with more or less as a factor for good and evil in all diseases of every organ, in all operations and in all injuries." This is absolutely true, and excellently put, though we think that the mention of the mental cortex does not add to strength and patness (if we may use such a word). There might be a little doubt as to what is meant by the term, and where exactly is the dividing line between it and other parts of the cortex as far as function is concerned. And the suggestion of partition seems rather to depreciate the leading idea of harmony and unity.

But whether this be so or not, Dr. Clouston pushes his views vigorously, illustrating them with plenty of cases in all sorts and conditions of men, including Macbeth. He insists on the capacity of a sound cortex for fighting off illness, death resulting less from the overmastery of disease than from lessening of resistive power. "The degenerating cortex, as old age comes on, not only loses its faculties of memory and keen volition, but of trophic energy which it has hitherto supplied to the organs and tissues, so that we have atheroma, the senile heart, a shrivelled skin, and many other tissue degenerations." In no direction does the relation of bodily disease and mental condition manifest itself more than in the reproductive functions and sexual matters. "Any practitioner of physic who treats menstrual disturbances without reference to the patient's mental and general brain condition will certainly not succeed fully in his efforts." "No philosophical gynæcologist can look lightly on the deliberate extinction, by surgical means, of the essential organs of reproduction. Profound mental

changes commonly follow after a time in young subjects. The difference between the mental qualities of an ox and a bull should be sufficiently evident even to the most surgical minded gynæcologist. Depend upon it, gentlemen, it may be almost as great a crime to castrate, as to kill." These are strong words, but not a whit too strong in the face of the ever increasing tendency to spay.

Dr. Clouston makes many appreciative and grateful references to that master of many, Dr. Laycock, who, he claims, filled in the gap between Charles Bell and Marshall Hall and the modern British School of Neurology. He told his hearers of Laycock's wonderful powers of labour and thought, his powers of deduction and generalisation, and of his work, the first in the field, in demonstrating the necessity for "reckoning with the cortex as a factor." His great powers of physiognomical diagnosis, and the methods of analysing minute changes in the facial appearance and expression, were specially dealt with in connection with the subject matter. It is a large subject that is well worth expanding.

Dr. Clouston makes a great point, by way of illustration, of the differences between day and night in nearly all disorders. In the latter the cortex is at its lowest point of efficiency. Resistiveness both mental and physical is comparatively in abeyance. "What man's courage is as great at three in the morning as at mid-day? Nay, what man's judgment is as clear then?" There is no doubt of the facts, and one would like to know how far the temporarily debased condition is due to exhaustion from the preceding day's work, and how far to the general effect of the absence of light, heat, and cheerful companionship. Would the cortex of a policeman on night-watch be affected at the same time as that of other mortals?

In many other ways Dr. Clouston works out his subject. He abstains advisedly from relating remarkable cases. "Most people recognise that there are rare and striking effects of mind on body; few fully realise its every-day effects. It is of far more consequence that our profession should remember the common than the uncommon in treating disease." But he does give one remarkable case of a "doctor who loathed purgatives, suffered from constipation, but could always get a good motion by putting a dose of salts by his bedside at night." What a mental cortex had that doctor!

Here and there are bits of broad pathology that would not force themselves on us without a little struggle, but we remember that they were used to point a very wholesome moral on a more or less didactic occasion. Dr. Clouston had an opportunity of rare occurrence—of treating a fascinating subject of which he is master in his own happy way, untrammelled by the requirements of either lecture room or debate, and he made the most of that opportunity.

The Idiot: His Place in Creation and his Claims on Society.
By Sir FREDERIC BATEMAN, M.D., LL.D. Second Edition. London: Jarrold and Sons. 1897. Post octavo, pp. 123.

This little book has been written at the request of the Directors of the Eastern Counties Asylum for Idiots. It takes the form of a public oration, in which the author recommends this unfortunate class to the compassion of the charitable.

As a distinguished physician who has devoted much attention to the diseases of the nervous system, and has long been consulting physician to an asylum for idiots, and to two asylums for lunatics, Sir Frederic Bateman occupies a position which entitles him to speak with authority. In eloquent language he shows what a heavy burden an idiot child is in a poor family; how he exhausts the energies of his parents, and how impossible it is for them to procure, from their own resources, the education needed to call out the dormant mental powers of the weak-minded. He points out that the association of idiots and insane patients in the same asylum is a disadvantage to both classes. "It is always," he observes, "a painful thing to see idiot children, whose mental faculties and physical powers are capable of much development and improvement, wandering, without object or special care, about the wards of a lunatic asylum. They cannot receive there the training and supervision they specially require, and they often seriously interfere with the comfort of the other inmates, and meet in return with ridicule and unkindness; moreover, their presence is a serious obstacle to the complete recovery of convalescent lunatics." He suggests, that as some of the union houses in England are far too large for present requirements, they might with advantage be devoted to the treatment of pauper idiots. As weak-minded children of this class fall

into the charge of the State, a larger proportion of them require special training than any other class. The asylums for idiots supported by public charity receive for a few years children from the class immediately above pauperism, while the parents of the wealthier classes are slow to recognise that there is anything wrong with their imbecile children, and slower to make an open admission of their weakness by sending them to special schools for the better classes. Thus most of them are kept at home till they cease to be educable and begin to be troublesome.

Though the book is cast in a popular form it displays a complete acquaintance with all the aspects of mental feebleness. Sir Frederic takes occasion to explain the nature of idiocy and the latest discoveries in its pathology and treatment. Owing to his extensive acquaintance with modern languages he shows a command of the whole literature of the subject.

He defines an idiot as "a being who possesses the tripartite nature of man, body, soul, and spirit, but who is the subject of an infirmity, consisting anatomically of a defective organisation and want of development of the brain, resulting in an inability more or less complete for the exercise of the intellectual, moral, and sensitive faculties." He gives full consideration to the thyroid treatment in sporadic cretinism; he discusses how this medication increases, and in other cases diminishes, the number of the red globules, and takes occasion to remark that the vital properties of the blood have been too much overlooked in our modern pathology.

The author also devotes a few pages to subjects which excite interest at the present day, such as consanguine marriages, over-pressure in education, and the relative mental powers of men and women, and he presents the arguments on each side with even-handed fairness. He shows much earnestness in proclaiming his belief, that the brain is but the instrument of the mind, and condemns the materialism of the day which heaps one hypothesis upon another, and presents the whole fabric as something built on the sure foundation and with the rigid methods of science.

Altogether the book will be useful in bringing the treatment and study of idiocy before the public, and the author is to be commended not only for his literary address and scientific knowledge, but for the warm spirit of philanthropy which pervades its pages.

Psychology in Education. By RURIC N. ROARK, Dean of the Department of Pedagogy, Kentucky State College. American Book Company, New York. Pp. 304. Price 1 dollar.

The object of this book is well expressed in its title. It deals with mind study in relation to methods of education. After a short description of the physical basis of mental action, in which occasion is taken to oppose strongly the materialistic explanation of mind, Mr. Roark considers in turn the conditions of effective mental activity, the faculties of mind, and the operations of mind, and after a short detailed description of each, he shows how they may be taken advantage of, and profitably developed and strengthened, in the educational system. In such a condensed account of the mental powers, it is inevitable that many of the statements must be dogmatic in character, and cannot have the arguments for or against them shown at length; and thus, in reading the book, the impression is sometimes given, that the psychology is rather incomplete or one-sided when it has to deal with questions which are still open to dispute. The writer's strong bias in favour of the transcendental view of mind is very evident. In the application, however, of recognised psychological facts to educational methods, Mr. Roark is on firm ground. He is evidently familiar with the work of teaching, and the instructions he gives, for the development and training of the different mental faculties, are of a thoroughly practical kind. He enforces the necessity in teaching of rousing and sustaining the interest of the pupils, and of training their judgment and reasoning powers rather than the mere memory; and the methods, he suggests with this view, are well adapted for their purpose. Altogether his book is very useful, and contains hints which are likely to be of value to the general reader as well as to the teacher.

Genius and Degeneration. A Psychological Study. By Dr. WILLIAM HIRSCH. London: William Heineman.

In his preface to this volume Dr. Hirsch states that the purpose of the publication was "to aid in the elucidation of certain anthropological moot questions and to clear up certain notions that were apt to create confusion, not only in medical circles but also in the wider field of the cultured

laity." A closer acquaintanceship, however, with the pages of the work, makes it evident that the design, which the author has had most closely in view, is that of sounding a counterblast to the paradoxical theories recently promulgated by Lombroso and his truculent disciple—Herr Nordau—that genius is practically a species of insanity.

The earlier chapters of the book are devoted to the consideration of such problems as "The Limits of Insanity," "The Psychology of Genius," "Genius and Insanity," and they serve as a foundation for the dialectic to which the author latterly undisguisedly betakes himself. It cannot be said that any of the definitions or elucidations contained in the preliminary discourses are either very striking or very original, but when once the writer gets fairly launched into his polemics, he succeeds in putting his finger upon a considerable number of vulnerable points in the positions occupied by his adversaries. Dr. Hirsch, however, might with advantage have taken the trouble to verify the accuracy of the illustrations of the theory of heredity brought forward by his most formidable antagonist. Dryden was not, as Lombroso apparently states, the nephew, but only a remote kinsman of Swift, and students of classical literature will be surprised to learn on the strength of the same remarkable authority, that "Lucian was either the grandson or the nephew of Seneca"!

The cardinal error, which seems to lie at the root of the Degeneration controversy, is the apparent inability of the disputants to disentwine the distinctive characteristics of the period upon which their own lot has been cast from those which have been common to all preceding generations. However grossly Nordau may have over-stated his case, he unquestionably succeeded in diagnosing a certain number of morbid features that are at present rampant in our midst, which had previously only existed in a comparatively embryonic form. Such phrases as *fin de siècleism*, decadence, modernity, which we now find perpetually bandied about in all directions, afford conclusive testimony of the essential truth of his indictment, and the malarial rubbish which is poured forth in such rich abundance from the Press amply confirms it.

The attitude, however, adopted by Dr. Hirsch is one which makes no abatements. Every author whom Nordau attacks he energetically defends, with the exception of Paul Verlaine and the luckless author of "*Lady Windermere's Fan*"

and "*A Woman of no Importance.*" It would almost appear that he regards everything which is new as true, and everything which is eccentric as original. Zola, Tolstoi, and Ibsen find in him a zealous, if not a particularly subtle, apologist. Even Manet, the crude precursor of artistic impressionism, is included in his brief; but it is on behalf of Wagner that his zeal for modernity reaches high-water mark. His vindication of the great composer from the onslaughts of his traducers is cogent enough, but it is none the less a perplexing fact, that the discovery of a *decadent* who is not an idolator of Wagnerian music would be a most arduous and unpromising quest. It is somewhat surprising in this connection to find that Dr. Hirsch should entirely ignore "*The Case against Wagner,*" as stated by his fellow-countryman Nietzsche, which is an infinitely more powerful indictment of the malefic tendencies displayed in the works of the great musical revolutionary than that of Nordau.

The volume is conspicuously free from all blemishes of taste and temper, and readers who desire to be reassured of the sanity of the period in which they are living may derive comfort from the perusal of Dr. Hirsch's pages. The literary diction of the translation leaves something to be desired, though it is in no way disfigured by solecism or obscurity.

The Law of and Practice in Lunacy. By A. WOOD RENTON, M.A., LL.B., Barrister-at-Law. Wm. Green and Sons, Edinburgh; and Stevens and Haynes, London. Pp. 1216. Price 50s.

This large volume is a monument of the energy, industry, and legal knowledge of Mr. Wood Renton, who is already very favourably known to our readers by his contributions to this Journal and to the *Dictionary of Psychological Medicine*. It gives a systematic account of the English law of lunacy and a practical annotation of the various statutes in which that law is embodied. The first part of the book deals with those subjects in which the legal relationships of lunacy have been gradually evolved almost entirely independent of statute, namely, Insanity and Contract, Insanity in Relation to Marriage, the Wills of Lunatics, Insanity and Tort, and Insanity and Life Insurance; and in each case Mr. Renton gives first a concise and clear account of the historical development of the law, and then a statement of the pre-

sent law and practice in the matter. This portion of the book is excellently well done. A reference to the legal cases quoted shows that it has been brought down to date, and it is very lucid in its descriptions.

The second part deals with lunacy dependent on statute, and is divided into two sections—Lunacy in its Civil Relationships and Lunacy in Relation to Criminal Law. The civil relationships of lunacy are now fixed almost entirely by the Lunacy Acts of 1890 and 1891, and these Acts are given by Mr. Renton in full, with very careful and complete annotations of each clause. In connection with this a sketch of lunacy administration in England down to 1890, and of lunacy administration in Scotland and Ireland is introduced. The Rules issued by the Commissioners in Lunacy in 1895 are added, and the Idiots Act of 1886 and the Lunacy (Vacating of Seats) Act of 1886 are given with full annotations. Lunacy in relation to criminal law is dealt with in the same systematic way, by first giving a full history of the legislation and practice in regard to criminal lunatics, and then printing the various Acts which are still in force, with exhaustive annotations. An excellent account and analysis of the Rules in *McNaghten's* case, with a sketch of the historical development of the law as to insanity in relation to criminal responsibility, are included in this section; and in connection therewith Mr. Renton discusses particularly the questions of moral insanity and drunkenness in their bearings on responsibility for criminal actions.

The third part, or appendix, contains certain other statutes bearing on lunacy and the Inebriates Acts of 1879 and 1898 (consolidated and annotated). The Commissioners' Regulations in regard to Mechanical Restraint, the Rules in Lunacy of 1892-93, and various other rules and circulars are given at length, and are followed by numerous forms and precedents for the various legal steps needed in dealing with lunacy. There is a full and excellent index, as well as a table (occupying 37 pages) of references for the different legal cases which have been quoted in the body of the book.

From what has been said above it will be seen that Mr. Renton covers a very large extent of ground, and that he deals with his subject in a systematic and exhaustive way. He treats it from a more strictly legal standpoint, and in far more minute detail, than fell within the scope of the preceding books on the same subject by Dr. Mercier and

Dr. Percy Smith (along with Mr. Pitt-Lewis and Mr. Hawke); and naturally no attempt is made to touch on the psychological and pathological features of insanity, except when these incidentally throw light on the development and present position of the law. We have noticed one or two slight errors or omissions. Thus, in the sketch of lunacy administration in Scotland, the paragraph on Lunatics in Private Dwellings may give the impression that all the pauper cases thus provided for have previously been under asylum care, while in reality a large proportion of them have never been so. Indeed, it is one of the special features of the system of private care that it provides in a suitable way for cases of insanity in which the symptoms have not been so severe as to need asylum control. Again, in speaking of the Scottish procedure for crimes committed by insane persons, it is not mentioned that during the currency of the first or temporary warrant the relatives of the lunatic (or the Inspector of Poor in the case of a pauper) may, with the concurrence of the Procurator-Fiscal, intervene and provide suitably for him, in which case further procedure under this special clause is dropped. This is found in practice to be a very useful provision, as in the minor, and sometimes even in the major, forms of crime due clearly to the mental derangement of the individual, it allows of his being dealt with as an ordinary lunatic instead of as a criminal lunatic. Though these points are mentioned here as perhaps worthy of correction in a future edition, we rise from Mr. Renton's book with a very strong impression of his remarkably able and full grasp of the subject, his general accuracy, his great care in the statement and criticism of the statutes and decisions on which the present law of lunacy is based, and his lucidity in setting forth his conclusions. It is a mine of information which will often be resorted to, both by legal and by medical men, and it will without doubt take rank as the standard work of reference in its particular subject.

PART III.—PSYCHOLOGICAL RETROSPECT.

THE PROGRESS OF PSYCHIATRY IN 1896.

AMERICAN: By Dr. H. M. BANNISTER.

The year that has just closed has not been one especially eventful in American psychiatry, but it has been one of steady progress. There has been nothing so stirring in its course as the attack upon American alienists, and hospitals for the insane, by Weir Mitchell two years ago, and the echoes of that have pretty completely died away. The feeling that prompted the criticisms alluded to is, it is believed, a survival from times that may now be considered past, when conditions existed that are rapidly becoming obsolete. The pioneers in mental medicine in this country were progressive men, fully up to, if not in advance of, their *confrères* in the specialty in any part of the world. They did not, however, build better than they knew when they organised their Association with official position as the only condition of membership, thus excluding some of the ablest workers, and naturally arousing their antagonism. This state of affairs no longer exists, and there is no reason or excuse for considering the present leaders of the remodelled Association as unprogressive or as having any reactionary tendencies whatever. In fact there is no reason why the union between alienists and neurologists, pointed out as so desirable by M. Pitres in his Presidential Address at Nancy last summer, should not be effected in this country as in France, and there are signs that this desideratum is not as distant as might be feared, if one were to be guided by the ideas of Dr. Mitchell's address alone.

One evil that still exists is political appointments in public asylums and hospitals, but this is decreasing, and is mainly confined at the present time to a few States in the South and Middle-West. In the Eastern States the conditions are much the same as in Great Britain; political changes have little or no effect upon charitable institutions. In Illinois a very bad precedent was set when the Democratic party came into power four years ago—of a pretty clean sweep in all the State Hospitals—and it is hardly to be expected now, that with another change the new administration will retain in office the appointees whose positions were obtained through active partisanship in the defeated party. It is possible, therefore, that we may see some of those who were removed, it is believed solely on political grounds, four years ago, reinstated, and if other changes are to be made it is hoped that the appointments will be made with due regard to fitness and to the satisfaction of the profession.

In New York State under their present civil service regulations such a thing as the appointment of an absolutely unfit person is an impossibility; all vacancies upon hospital staffs must be filled by competitive examination, which takes account of experience as well as acquirements. In that State, as well as in some others, it is becoming the rule to have *internes*, recent graduates, attached to the medical staffs of the State Hospitals, and from these come largely the competitors for the regular staff positions. In this way the junior assistants come to their work with some experience in their duties, and those who do not continue in the specialty have at least had the advantage of having acquired some practical knowledge of mental disorders, which is no disadvantage in general practice, and fits them for the positions of medical examiners, etc., provided for under the State laws. Besides the New York institutions, medical internes are now to be found in some of the State Hospitals of Massachusetts, Alabama, and Illinois, in all of which the experiment seems to work fairly well. The quality of the candidates seems to be satisfactory, though it might be thought possible that the general hospital positions, with their greater clinical advantages, would command the highest grade of ability, and the hospitals for the insane receive only those who failed or feared to compete for the more desirable places. The fact, that asylum internes are generally paid a small salary, helps, however, to make the positions desirable, and there has so far been no complaint of poor material.

There has been considerable criticism by competent authorities of the amended New York commitment law, which must be considered, indeed, as a concession to popular prejudices or fears. The notion that sane persons are confined in asylums is a very widespread one, and one that is hard to overcome, notwithstanding the fact that instances of it are hard to find, and those where it is continued in bad faith still harder. It is not believed by those qualified to judge, that the prior New York law was lacking in any due protection of the individual, but legislators evidently intended to make personal liberty still more secure. To us in Illinois the modified statute, making the commitments of the insane a judicial procedure, seems moderate, and corresponds with our own amended regulations. The practical working will probably differ from that in Illinois, much as did the former practice; the optional jury trial will probably be almost or quite as infrequent in New York as are commitments by certificate in Chicago. It is curious to note the conservatism of the legal mind in this as in other matters; the lawyers and judges hold to the jury commitment as firmly as the alienists oppose it.

There are certain provisions in the New York law that seem useless and possibly damaging, such as the requirement that the examining physicians see the patient together, and the forbidding of the reception of the patient after five days have elapsed since

the signing of the order of commitment, and the abolition of the old provision for temporary detention. It is worth noting, also, that the late Medical Commissioner in Lunacy—Dr. MacDonald—disclaims all responsibility for the amendments. It is possible, too, as Dr. R. L. Parsons claims, some of the apparently objectionable features may be modified by judicial interpretations. But, in a medical point of view, it can hardly be considered a great improvement over the previously existing statute.

The consolidation of the control of the New York State Hospitals under the Lunacy Commission is likely to produce a unity of effort in scientific directions amongst them that is a decided advantage in many respects. The establishment of a State Pathological Institute under the direction of Dr. Van Gieson is one of the results, the *State Hospitals Bulletin* is another, and both of these mark steps in advance. Whether the central control will always be as enlightened and progressive is possibly a question, especially since the Commissioners are coming to be amongst the most desirable salaried State offices. They are likely to be political appointments, and the politics of New York have not always been of the ideal kind. With Dr. Wise at its head there is little danger, however, for the present, and the traditions and unwritten law of the office which are now being formed will go far to save it from future debasement. It is to be hoped that the *quasi* absolutism which the system amounts to will always be a wise and benevolent one, and that its possession of these qualities will not be merely a happy accident.

Pathological laboratories are being started in other States; witness the one recently opened in the Indiana Central Hospital at Indianapolis, and that at the Worcester, Mass., Lunatic Hospital under the direction of Dr. Meyer, who left a similar position at Kankakee. The very thoroughly equipped psychological laboratory at the McLean Hospital at Waverley, Mass., should also be mentioned in this connection. President Stanley Hall's address before our Medico-Psychological Association dwelt especially on the value of psychological studies of the insane, a field that has as yet been comparatively little worked, but which is eminently practicable and suggestive. It can probably be said with safety that the future is full of promise of good work in this line in these two Massachusetts institutions. Dr. Hock at Waverley has had the advantage of special study and collaboration with Kraepelin at Heidelberg, and at Worcester Dr. Meyer has the stimulating presence of President Hall and his co-workers of Clark University. The value of observation and study of pathological conditions of mind is beginning to be better appreciated by workers in the field of psychology, and regularly systematised psychological studies in asylums will be an important adjunct to the investigation of the phenomena of normal mind. There is no reason why such studies should not be successfully prosecuted in

the other parts of the country, especially in the hospitals within easy reach of the great libraries, medical and scientific, of Chicago, Washington, New York, and Philadelphia. The advantages to psychiatry are obvious enough; the use of the newer methods of psychology in the study of the insane can hardly fail to be helpful to a better knowledge of their disorder.

As regards purely pathological work, the prospects are good, better, in fact, than ever before in American Hospitals for the Insane. The reputation of Dr. Van Gieson is a guarantee of the quality of the results of the New York Pathological Institute, and I believe equally good work will be done elsewhere. The importance of clinical observation is also better recognised than ever before. As an evidence of the increasing scientific zeal, there may be mentioned the programme of research laid out for its members by the Association of Assistant Physicians, which includes a wide range of subjects covering nearly all the fields of mental and nervous disorders and of morbid and normal psychology. This is not a too ambitious attempt to overdo, but is offered, it is understood, as a suggestion or guide, and the members are to take up and report on such of its subjects as they can profitably devote themselves to between the meetings. This Association is practically an organisation devised by the juniors of the medical staffs for mutual improvement, in which they could feel a greater freedom than they could feel elsewhere, and the result has so far been very satisfactory. It will probably have to adopt a territorial designation soon, as the present Society is confined in its membership to the middle Western States, and there is some prospect of similar organisations being started in other sections of the country. Another territorial Association is that of the Southern Hospitals for the Insane, which held its second annual session last year, and I should count the long-established New England Psychological Society as another. None of these are intended to supplant or interfere with the general Society—the American Medico-Psychological Association—with which they have largely a membership in common; they are simply evidences of the increasing interest in the specialty. The social elements of the meetings are naturally attractive, but there is ample evidence that they are not their leading feature or their cause.

There are many other matters that might be here mentioned did space permit: the training of attendants, which is a very live question in American institutions; the introduction of special forms of treatment, more especially those that assimilate a hospital for the insane to a general hospital, etc. All these are being actively discussed and practically tested, and the methods and results are being given to the public from time to time in the medical Press.

The deaths, that have occurred during the past year among

American alienists, have been few. The most prominent one is that of Dr. J. H. Callender, who, as President of the Association, and in other ways, had long held a leading position. Dr. Henry K. Pusey was less known, and not so much of a veteran in the specialty, but was not less one of its most worthy members. He has the honour of having taken charge of one of the worst of American asylums, and brought it up to modern standards. It is a rather curious fact, and one that illustrates a tendency that exists to some extent in this country and elsewhere, that when he was removed from the direction of the asylum for political reasons, the only charge brought against him was that he was too much of a professional man and philanthropist, and was lacking in business ability. This, in view of the fact that he had, without large special appropriations, paid off the deficits of his predecessor and nearly doubled the capacity of the institution, was too transparent, the public demanded his reinstatement, and he held his position till his resignation, about a year before his death. The charge is one of the best proofs that his qualities as an alienist physician overshadowed his really remarkable administrative ability.

FRANCE: By DR. RENÉ SEMELAIGNE.

Insanity of Persecution.

1. *General Paralysis and Ideas of Persecution.*—Dr. Magnan describes a case of an hereditarily degenerate patient who was attacked by general paralysis in 1891. About the same period he manifested ideas of persecution and attempted suicide. On admission to an asylum in the following year he presented the classical signs of general paralysis, and in addition some ideas of persecution and hallucination of hearing of a similar nature. The symptoms of meningo-encephalitis disappeared, while the delusions of suspicion were proportionately increasing. Psychomotor hallucinatory delusions of general and genital sensibility were added to the hallucinations of hearing, and he attacked his "persecutors" with deliberate violence. In March, 1893, he had two epileptiform attacks, and the signs of general paralysis reappeared in a more serious form. The delusions of persecution vanished. Again the paralytic symptoms retrogressed, and the delusions revived. In July, 1896, his mental faculties had declined in vigour, and the persecutory insanity had progressively lost in activity and cohesion.

2. *Alcoholism and Persecuting Insanity.*—Dr. Magnan also described delusions of persecution in degenerate drunkards, persisting sometimes for many months after the disappearance of the alcoholic delirium. Ideas of persecution are most frequent,

because the vivid hallucinations of the acute stage seem to create a tendency towards a system of persecution. The ordinary alcoholic patient is easily convinced, after some days' abstinence, that his ideas were really pathological; but the degenerate alcoholic (and it does not matter whether the degeneration is hereditary or acquired) presents pathological sequelæ after the toxic insanity passes.

3. *Delusions of Persecution "à double forme."*—Dr. Vallon points out a special kind of delusions of persecution to which he has given the name "à double forme." In the generality of cases the delusions of the reasoning class are not dangerous, except to the few persons who have been singled out as persecutors; while those of the hallucinatory class wreak their vengeance on the first comer. The two phases are very infrequently met with in one and the same patient. Dr. Vallon's case was that of a highly educated gentleman who became insane consequent on the refusal of a railway concession. He believed that he was the victim of persecution at the hands of the Minister, and was in consequence arrested. Hallucination of hearing appeared seven or eight years after the inception of the attack.

4. *Senile Delusions of Persecution.*—Dr. Régis reports the case of a lady who presented delusions of persecution for the first time at the age of 73. She suspected her son's widow of being her persecutor. There were no cases of insanity in the family, but she was ghoulish, as were her ancestors.

5. *Clinical Types of the Insanity of Persecution.*—Dr. Jules Falret describes three principal types. 1. The disease dates from infancy or puberty. 2. The first symptoms are hypochondriasis and disorders of general sensation. 3. The malady appears in adult life or at the climacteric.

6. *Illusion of "déjà vu," or False Memory.*—Dr. Arnaud reported the case of a highly intelligent officer who had been placed second at the Military School of St. Cyr. He had served for five years at Tonkin, and was sent home to France in 1891, after a very severe attack of malarial fever. At that time he suffered from general amnesia, and had forgotten nearly all the events of his life. In the course of some months he improved, although he still suffered from neurasthenia. In January, 1893, the first signs of false memory appeared. He recognised newspaper articles as having appeared before, and had some delusions of persecution. In 1894 he went to the Vanves Private Asylum as a voluntary patient, where he immediately recognised Dr. Jules Falret and Dr. Arnaud as having received him at the same asylum a year previously. He believed that he daily heard and saw the same things as the year before, that he had the same sensations, the same dreams, the same mental states. He said, "I live two parallel lives." These renewed illusions interfered with his chronological ideas, he thought that he was in the asylum for the

third time, for the false recollection of the previous year appeared to him to be the previous remembrance of a *déjà vu*. His delusions continue marked, and he still remains in the asylum.

Dr. Pierre Janet is of opinion that this state is more a fact of perception than of memory. He had met with cases, especially among the hysterical and the neurasthenic, who presented the illusion of a "*jamais vu*;" in others the perception appeared to be a remembrance—the illusion of an "*anciennement vu*."

Dr. Paul Garnier, on the other hand, regards the term *false memory* as incorrect, although useful in keeping such cases in remembrance. It is an amnesia of knowledge of time.

Hallucinations.—At the Congress of Nancy of 1896 Dr. Seglas presented a report on the pathogenesis, physiology, and pathology of hallucination of hearing, in which he insisted on the constant intervention of the cortical centres, while abstaining from asserting any general theory. Dr. Charles Vallon regarded all hallucinations as phenomena originating in the cerebral centres, and did not admit the existence of peripheral causes. Dr. Gilbert Ballet believed the phenomena to be strictly intellectual, regarding the auditory centres as necessary, but not sufficient to account for hallucinations. Dr. Régis reported a case of unilateral hallucinations of hearing *en écho*. While the patient remained conscious they were exacerbated by new sensations, and the patient suffered from catarrhal otitis. Dr. Paul Garnier, however, would not admit that this was a true hallucination, but regarded it as an illusion.

Drs. Charles Vallon and Marie reported a case of hallucination of hearing after a suicidal attempt. The patient had shot himself in the temple, and heard enemies on both sides of his head, but alternately. He had also hallucinations of sight of a divine and comforting nature. It was observed that the visions did not speak, nor did the enemies appear.

Professor Pitres collected thirty-two cases of hallucinations occurring in those who had lost limbs by amputation. They regarded these absent members as still existing and obedient to the will. Professor Pitres called these "*membres fantomes*," and found that the injection of cocaine into the scar abruptly terminated the hallucination pending the influence of the drug.

Alcoholic Children.—Dr. Valin believes that the custom of giving wet nurses alcoholic drinks in excess is most inconsiderate and dangerous. The alcohol passes into the system of the infant and gives rise to nervous disorders or even convulsions. Cessation of the alcoholic drink is followed by cessation of the morbid phenomena.

General Paralysis.—Dr. Lapointe related a case of general paralysis lasting for twenty-five years, the diagnosis being eventually confirmed by post-mortem examination. Dr. Charles Vallon regards such cases as remissions, or a stoppage of the pathological evolution.

Surgical Treatment of Mental Disorders.—Dr. Auguste Voisin related a case of severe continuous headache, principally in the left temple, which had persisted for three years in a woman æt. 21. The pain resulted in suicidal melancholia. She had convulsive attacks, incorrigible vomiting, right-sided hemiparesis, and facial hemiplegia. An opening was made in the left temporal region, and a serous cyst was found under an area of pachymeningitis, affecting the ascending frontal and parietal convolutions. The removal of the cyst was followed by recovery.

Gelatinous Tremor of the Tongue.—Dr. Victor Parant referred to patients suffering from recent melancholia of infective origin with special tremor of the tongue, to which he gives the name *Gelatinous*, because it closely resembles the shaking of a jelly.

BELGIUM: By Dr. JULES MOREL.

Report of the Government on the State of the Insane.

The Government of Belgium have published (1895) a Report of the State of the Insane in the Kingdom for the period 1883-92. This came under the notice of the Belgian alienists in the beginning of 1896. It is certainly the most important yet published, for it marks a great step in the way of progress. It criticises and suggests improvements in the asylums in all directions. Most of these institutions are in the hands of private proprietors, but financial difficulties stand in the way of any modification of this condition of affairs.

As to the medical service it is not what it should be. The powers of the Medical Superintendents are not wide enough; many are not independent, and feel themselves unable to raise the scientific level of their asylums. The Minister of Justice has promulgated the idea of a special degree of *Doctor of Psychological Medicine*.

There are still detained in asylums too many patients who might be sent to the colonies of Gheel and Lierneux, and it would be a humane endeavour to retain as few as possible of these who are inoffensive. The Report makes a distinction between the curable and incurable for whom asylum care is necessary. If the Board of Charities in many towns could take the initiative in the erection of wards for the reception of the incurable who do not require special medical care, asylums would soon be disencumbered. And if in every town provisional wards could be organised for the cure of recent cases these would constitute substantial progress. The curable should be sent to asylums, which would then become real hospitals, whilst the very dangerous should be confined in special institutions. This last, however, is a matter of great difficulty. The Minister of Justice

desires to institute special hospitals for curable patients, built with that end in view, and managed by a scientific staff of officers. He would also extend the colony system for those not absolutely requiring asylum care and control. There are 9,149 incurable cases in the Belgian Asylums, 2,670* curable cases. The aim of the Minister is to place the last-named in the Hospice Guislain and the two State Asylums of Mons and Tournai, besides certain other institutions who would grant every guarantee.

Manual occupation has no place in the Belgian Asylums with few exceptions, and the Government intends to do all that is possible by formulating special rules to extend this department. Supervision is generally sufficient by day, but it requires to be more effective by night. This remark applies generally.

The general directions, issued by the Government in 1852, are now no longer sufficient, and it is the intention of the Minister to prepare new rules for the planning, building, and organisation of asylums.

Concerning private care the law of 1874 is silent, but it is very difficult to state when sequestration in these circumstances legally begins and when it ought to cease. That must be solved before any official decision can be issued.

After-care of the insane has existed for a few years in connection with the State Asylums, and ought to be extended. Every institution receiving poor patients should have special arrangements for after-care. It exists now in the State Asylum of Mons.

The population of the asylums in Belgium is constantly increasing. From 1872 till 1882 the numbers rose by 5,485; from 1883 till 1887 by 7,630.

The patients are classified as follows:—Imbeciles 20, mania 18, systematised psychoses 15, secondary dementia 13, melancholia 12, neurotic psychoses 9, organic dementia 3·9, general paralysis 3, and intoxications 3 per cent. This last-named class is stated too low, but very many certificates fail to show habits of intoxication. The information given is faulty and incomplete in many respects. In my opinion alcohol is the chief cause of mental diseases and degeneracy amongst men in this country.

Imbeciles and idiots constitute at least one-fifth; while with the demented and neurotic insane they constitute at least the half of the asylum population.

We cannot say more about these statistics. They are undeserving of confidence while medical officers continue to be insufficiently paid to permit of them giving their whole time and attention to their special duties. There are nearly fifty asylums in Belgium, and only at Mons, Tournai, Gheel, and Lierneux are the Medical Superintendents restricted from private practice.

This Report is certainly conceived on a higher standpoint than

* This proportion is very high and cannot be the right one

those published from 1850 till 1882. Notwithstanding, it cannot be compared favourably with similar documents issued in Holland, England, Scotland, Ireland, and the United States of America. Let us hope that the next will inform us of a complete reformation of Belgian Law and Belgian Asylums.

The Nursing of the Insane.

The question of attendants was brought before the Société de Médecine Mentale by Dr. Morel, who had, in 1894, reviewed what had been done in Britain, Holland, Germany, France, and the United States. He recorded an enormous advance, and repeated the words of Dr. Peeters in 1893, "The responsibility of the Medical Superintendent increases in proportion to the inferiority of the condition of the attendants. The attendant in an asylum is not merely a nurse; the best will, the greatest devotion, the highest degree of suitability, are insufficient to attain the object in view. He who is charged with the selection of attendants ought to raise their intellectual and moral level. Educate him for his work."

In 1895 the same Society had decided to publish an Attendants' Manual, and a circular was sent to all Superintendents and physicians of the Belgian Asylums in order to obtain subscriptions for the forthcoming book. It was mentioned that every attendant should possess a copy. Most of the Superintendents only subscribed for one copy, and the enterprise had no success. This is the reason why the initiative of the Society was temporarily abandoned.

In the discussion, following on the reading of the plan of the manual by Dr. Morel, some members were of opinion that no instruction in anatomy and physiology should be given, and this notwithstanding that it was abundantly proved that these subjects were fundamental in the course of teaching in the countries already mentioned. Dr. Morel thought it impossible to produce a satisfactory book without following nearly the same plan as that found necessary by the Medico-Psychological Association of Great Britain.

Radio-bicipital Reflexes.

Professor Francotte, of the University of Liege, has published his observations on the radio-bicipital reflexes already mentioned by Sternberg in 1893. His conclusions were based upon investigations on 527 persons (427 in dispensary practice and 100 insane). Of the whole number the reflex existed in 402, and in these the contraction was moderate in extent in 159 (a slight raising of the forearm), while it was more pronounced in 243 (flexion of the forearm on the arm). In the first group of 427 the reflex failed in 23 per cent.—for women 16, for men 41 per cent. In the second group of 100 it failed in 17 per cent.—for women 13, for men 20 per cent.

Thus the reflex was observed more frequently in women than in men, but less in the second group, which included numerous general paralytics. The existence of radio-bicipital reflex has no signification. However, any exaggeration proves a reflex hyper-excitability. It is found especially among the anæmic and neurotic groups, and is very frequent in general paralysis. The exaggeration on one side only generally indicates a state of hyper-tonicity or the beginning of actual contraction. Professor Francotte has observed it in two cases of paralysis agitans.

There is usually a connection between the radio-bicipital and the knee-reflex, although there are cases in which the first is very feeble, while the last is very marked, and *vice-versâ*.

Trional.

Dr. Villers prefers trional to sulphonal and many other hypnotics in cases of obstinate insomnia, senile dementia, etc. It has no noxious action, even in patients suffering from mitral insufficiency.

GERMANY: By Dr. J. BRESLER.

Although many an urgent desire of the German alienists remains unfulfilled, and the accomplishment needs still greater efforts, the last year has brought some important progress in the practical psychiatry of our country, and there is hope that the aims before us will soon be reached too.

In the creation of the *new code of civil law* of the German Empire, which in the last year has been accepted by the Parliament and sanctioned by the Emperor, and which will come into operation in 1900, many an occasion naturally was given to consult scientific psychiatry, and to pay regard to its claims. The best evidence how this has been done is the remark added with general applause by the President of the Association of German Alienists, Dr. Jolly, at the annual meeting on the 18th and 19th September, 1896, at Heidelberg, on the paper read by Mendel on the "Insane in the New Code Civil, according to the Resolutions of the German Parliament," "that any discussion be unnecessary, and it be sufficient that alienists express their satisfaction with the accomplishment of the great national work which pays such full regard to the desires of psychiatry."

The paragraphs of the new civil code in which the alienist may take interest are the following:—

Section 6. Under guardianship *may** be placed a person—

1. Who, in consequence of insanity or of weakness of mind, is unable to take care of his affairs;

* Not "*must*," as it was formerly!

2. Who by prodigality exposes himself or his family to the danger of distress ;

3. Who, in consequence of drunkenness, is unable to take care of his affairs or exposes himself or his family to the danger of distress or endangers the safety of others.

The guardianship is to be terminated when the cause of the guardianship ceases.

(It is curious that (as Mendel, who co-operated as expert in the composition of these paragraphs, communicates) the party of the Social Democrats in the Parliament tried to oppose Clause No. 3 from fear that men of the working class could be deprived of electoral rights by means of this guardianship.)

Section 104. Incapable of transacting business is he -

1. Who has not completed the seventh year ;

2. Who is in a state of morbid disorder of the mental activity, which precludes free volition, unless this state, according to its nature, is a transitory one ;

3. Who is placed under guardianship because of insanity.

Section 5. The declaratory act of a person incapable of transacting business is null. So also is a declaratory act which is made in a state of unconsciousness or of transitory disturbance of the mental activity.

(As Mendel emphasises, it may happen that a person who is insane in the psychiatric sense, in certain circumstances, may perform a declaratory act, *e.g.*, makes his last will.)

Section 114. Who, in consequence of weakness of mind, of prodigality or drunkenness, is placed under guardianship or is placed under a provisional guardianship, is, concerning his capability of transacting business, like a *minor* person who has completed the seventh year (*i.e.*, is *limited* in the capability of transacting business, and needs, for a declaratory act, the consent of his legal guardian, Section 106, 107).

Section 826. Who, in a state of unconsciousness or in a state of morbid disturbance of the mental activity, precluding free volition, injures another, is not responsible for the injury. When, however, *he has placed himself in a transitory state of this kind by means of spirituous drinks or by similar means*, he is *responsible for the injury* caused illegally in this state, in the same manner as if he were charged with negligence. The responsibility does not hold when he has fallen in this state without his own fault.

Section 829. Who, in consequence of Section 827 (and Section 828) is not responsible in one of the cases designed in the Sections 823-826 for injury caused by him, has nevertheless—when the reparation of the injury cannot be obtained from a third person (the supervisor)—to repair the injury in as far as the equity, corresponding to the circumstances (especially to the condition of the persons concerned), needs an indemnification, but the means

are not to be withdrawn from him which he needs for his livelihood suitable to his rank or for the accomplishment of his legal duties of maintenance.

Section 832. Who, is legally responsible for the supervision of a person who, because of minority or of mental or bodily state, needs supervision, is responsible for the reparation of the injury which this person causes illegally to a third. The duty of indemnity does not take place when he has sufficed to his duty of supervision or when the injury would have arisen under sufficient supervision.

The same responsibility touches him who takes the supervision of such a person by contract.

Section 1569. A husband (or wife) can go to law for divorce when the wife or husband is insane, if the insanity has lasted at least three years during the matrimony, and has reached such a degree that intellectual companionship between them is abolished, and all expectation of re-establishment of this companionship is excluded.

The sane husband has to provide for the maintenance of the insane wife, divorced because of insanity, and *vice versa*.

The Catholic party of the Parliament tried to oppose this paragraph as repugnant to the Christian character of matrimony; on the ground that only a great violation of matrimonial duties should be a cause of divorce.

As another advance of psychiatry in Germany, we note a ministerial enactment in Prussia, that physicians who wish to be admitted to the examination for "*district physicians*" (*Kreis-Physikus*) must have previously acquired a sufficient *knowledge of psychological medicine*, and therefore must have had, during six months, clinical instruction in a psychiatric clinic of a university, or must have discharged the duties of an assistant in a lunatic asylum during three months (both, too, a short time as it seems!). In the examination, the candidate has to give evidence of his capability of investigating and certifying morbid states of mind, and of his knowledge of forensic psychiatry; a scientific essay (written) is to be given also by him, on any question of psychological medicine (but instead of it the examiner may set a theme on public hygiene).

Lunacy administration being a matter of self-government of the individual provinces and cities, under the survey of the State Government, but without any centralisation, great variety exists with regard to many objects of administration, by no means in behalf of lunacy itself, *e.g.*, the *attendantship*. Now, concerning this latter, at the meeting mentioned above, the Association of German Alienists accepted unanimously, after a long discussion, the following theses, that:—

1. It is necessary, for the management of lunatics, that especially instructed persons be supplied, who should remain in the service as long as possible.

2. Each asylum should, so far as possible, itself train up its attendants. The director and the assistants of the asylum should instruct the attendants in the attendance and care of patients.

3. Arrangements are to be made, by which the future of the attendants is insured as far as possible (higher salary, which should increase proportionately with the years spent in the service, premiums after a certain number of years, pensions, widows' and orphans' settlements, application of the insurance law against accidents).

4. Arrangements are to be made by which the necessary recreation and health of the attendants are secured (sufficient number of attendants in proportion to the number of the patients, regular intervals free from service, special rooms for recreation; longer furloughs without deduction from salary).

We hope these claims will be fulfilled by the Governments, at an early date.

As is known, in Germany and mostly in Prussia, some years ago, and especially in 1895, when the mismanagement by lay brothers in the convent of Marienberg was exposed, *lunacy* and *alienists* were often the object of animadversions not only from the public, but also from men in high position and rank, e.g., from Finkelnburg († 1896), who was himself in former times an alienist. Now, in 1896, these complaints ceased after their groundlessness (except naturally the Marienberg affair) was known, and the Government of Prussia (and of the other States) had calmed public opinion by rendering more severe some regulations concerning the reception of the insane into private asylums, the management of these latter, the guardianship of the insane, the governmental supervision of the asylums, private and public, etc.

With regard to the progress of *scientific psychiatry*, we can greet at the end of 1896, as a sign of increasing psychiatric investigation, the appearance of a new "*Monthly Journal of Psychiatry and Neurology*," edited by L. Wernicke and Th. Ziehen. In the preface Wernicke emphasises that the next task of psychiatry is to create as limited forms as possible of mental diseases, for which exact clinical observation is the best and only basis; he refuses attempts at simplifying and joining together groups of diseases, and the endeavour to pay regard only to etiology in settling the single classes of insanity. Also he opposes the efforts made by Flechsig to found a psychology on the results of his anatomical investigation of the brain, especially the embryonic and developmental brain (sensory centres and associative or "thinking" centres—Flechsig). Notwithstanding these objections, the works, published newly by Flechsig, "*Brain and Mind*" and "*Localisation of the Mental Functions*," are of the greatest value, and we must leave it to the future which of these savants will throw more light in the unknown and dark depths of our science.

I cannot conclude this report without mentioning a direction

of scientific investigation taken newly by Hallervorden (clinical teacher in psychiatry, Königsberg) in trying to found a *clinical psychology* and a *psychohygiene*. A report on the papers representing this author's views and plans would need too much space here, and we must confine ourselves to translating the following passage of his paper, "Clinical Psychology, the Preliminary of the Psychohygiene" (*Deutsch. Med. Wochenschrift*, 1896, 41):— "Clinical psychology as a method is the real psychology of the individual sane man, studied in the clinical manner of teaching. Till now, we have only metaphysic or theoretic or laboratory psychology, a psychology of species, briefly a psychology of the mind; but we don't have a psychology of the *living man*, because the *individual* has till now been made the object of *investigation*—insufficiently, of *teaching*—not at all. Therefore a whosoever *sane individual* is to be investigated by the teacher in the auditory before the students of *all sciences*; an exact anamnesis inclusive of heredity, somatic state, state of the head, of the nervous system, of the mind in all directions, is to be brought up, the method of investigation, somatic and psychical is to be demonstrated, and, after registering the statements, the demonstrated *individual* is to be talked over as a *whole*, according to the results of investigation; to be explained, diagnosed, and prognosed, especially in the affectional, moral, and intellectual spheres. For each lecture another individual with special variety of age, sex, profession, education, endowment, etc., is taken. Of course the philosophical, psychological, and individual limits of the investigation are to be emphasised." Psychology will thus be definitely brought out of the auditory of the philosopher and out of the laboratory of the psychologist into the free territory of the physician; the name *clinical psychology* has been elected as emphasising the *medical* origin and the *medical* application of the matter. (See also "*Arbeit und Wille*," by Hallervorden, Würzburg, 1896). We add that Hallervorden's manner of psychological investigation is very much akin to Kraepelin's works.

HOLLAND: By Dr. F. M. COWAN.

What Solon told the King of Lydia, several centuries ago, is quite as true now as it proved to be in the case of Cræsus. When our law for the study of physic was introduced, it was considered an improvement that mental diseases should be taught at our university; true, it was considered strange that this indispensable branch of medicine should be only imparted at one medical school; still, it was hoped that the necessity of possessing a chair for psychological medicine at every university would be soon imperiously felt. A long time elapsed, and at last Dr. Winkler was appointed a lector on mental and nervous diseases at Utrecht.

The governors of the lunatic asylum were willing to allow him

a lecture-room, and to let him demonstrate the inmates of the asylum, subject to the approval of the Medical Superintendent. As for nervous diseases nothing was done, and he was to shift for himself. The new lecturer incessantly applied to the different authorities, urging them to let him have one or more proper wards for his nervous clinic, but all to no avail. As Dr. Winkler grew more and more pressing, and threatened to resign an appointment in which he thought he could not be useful, the consequence was that he was told that his lectorship would be converted into a professorship, to which his reply was that for the students he considered a proper clinic of far higher importance than a high title for the teacher. This argument being irrefutable, he was told that the clinic would certainly be considered, that if he now resigned this would cause a great deal of delay, and that instead of serving the good cause, he would only put off the good things that might yet be had.

The professorship arrived, but no wards for the new professor; who, in consequence, was not unlike the Generals in some South American Republics who have no army to command, *i.e.*, he was to teach his students cases, which he could not demonstrate *ad oculos*.

Wearied of the tedious ways of the circumlocution office, the professor one day astonished his audience by telling them that he would resign unless proper wards were provided for him within a short time. This seemed to act like magic; new promises were made, which were not carried out, and at last Dr. Winkler resigned, thus giving up a well-paid and honourable position, which he considered he could not keep for the good of humanity, and preferring the onerous duties of a consulting physician.

Most fortunately the city of Amsterdam saw its interest, and called Dr. Winkler to the chair at the university. Here at least, in the suburban hospital, he finds what he has so long been calling for and what has so long been withheld.

On the 17th of November our Psychological Association celebrated its 25th anniversary at Utrecht, this being the place where the first meeting took place, when it was decided to form a society of alienists, where important questions might be discussed, and which should promote the common interests of physicians engaged in the treatment of the insane.

It was decided that the Journal (*Psychiatrische Bladen*) should henceforth be published in two monthly numbers, and that it should be styled a Journal for Mental and Nervous Diseases. Amongst the foreign honorary members appointed, I may mention, the indefatigable Professor Gowers.

It would be a pity if the society were to lose sight altogether of one of the principal motives of the founders, *viz.*, the promoting of the interests of alienists; surely, it would not be beneath its dignity to interfere in cases of not purely scientific character.

One of the papers read at the meeting was by Dr. Van An del, an Inspector of Asylums, who attempted to give a definition of a "lunatic." After criticising the definition given by Van der Kolk, and which was unfortunately included in our first law, he gives a definition which carefully avoids the terms "free will" and "moral responsibility," and answers the question, What is a lunatic? by "A lunatic is one who from defective development, or from morbid disturbance of his intellectual powers, is unable to care for himself, or to respect the rights of others." It is not the place here to give a criticism of the definition; few as the words are in which it is couched, it certainly has cost its author a great deal of reflection and study to give it. Besides, he himself quotes the words, "Omnis definitio claudicat et periculosa," and he urges the necessity of having a formula which we may give the jurist, and which may be applicable, to test the admissibility of patients to an asylum. As to the latter point, I believe we all feel what is meant, and we physicians hardly need a definition. M. Jourdain had spoken prose all his life without being aware of it, and we alienists give our diagnosis on individual cases without asking for a definition. We shall not hesitate a moment to refuse a certificate of admission to a patient delirious from typhoid, or to a man raving from intoxication, and yet these are unable to respect the rights of others. Yet we all agree with Dr. Van An del that a definition may often be needed and would be very useful.

A strong tendency is perceptible amongst laymen to carry on psychological investigations; two members of the faculty of arts stand prominent, Professor Weymans, at Groningen, and Dr. Jelgersina, brother to the physician at Amsterdam, and one of our medical periodicals earnestly appealed to physicians to devote their attention to this important class of investigation, and not to let this part of anthropological investigation slip entirely from their hands.

ITALY: By Dr. BIANCHI.

It would be difficult to give a *resumé* of all the important work, which has been accomplished in the domain of psychiatry, in Italy during the year under review. The psychiatric movement may be considered in various aspects. From the point of view of legislation, it is unhappily necessary to confess, that Italy has not yet a law relating to the insane and to asylums. On various occasions under different Ministries the endeavour has been made to present a law of this nature for the approval of Parliament, but up to the present without success. Thus the various proposals known under the designations "Nicotera" and "Depretis," that elaborated during the Ministry of Giolitti, by Commission, of which the writer was a member, each and all have been consigned to the archives of the

Ministry of the Interior. The last Congress of Psychiatry, which met in Florence last October, expressed its wish that this great defect in legislation might be remedied, and all matters, bearing upon the insane and asylums, finally dealt with and systematised. The President of the Council of Ministers, the Marquis di Rudini, was approached on the subject, and he has given an assurance that legislation will shortly be introduced in respect to this matter. It is therefore hoped that there may soon be an end to the confusion which exists in the various districts of Italy in matters pertaining to lunacy.

Moreover, the administration in the respective asylums is carried out on different lines, and the director of the asylum does not always enjoy that authority, and that liberty of action, which should not be denied to those who undertake the grave responsibility associated with the control and treatment of the insane. In certain asylums of Upper Italy there is a veritable religious supervision, a considerable part of the administrative (stewards') and other duties being entrusted to sisters of various orders; to such an extent does this state of things obtain that the Psychological Association at one of its meetings made protest against the invasion of asylums by religious orders. It is to be feared that such protests will remain unnoticed, at any rate as far as certain asylums are concerned. In other districts the governors assume much of the authority which should attach to the director, and the work proceeds on anything but smooth lines. In certain asylums, more especially in that of Naples, the governors confine themselves strictly to matters of administration, and confide to the director full authority in the institution, and responsibility for its control.

No new asylums have been built during the year. In the province of Naples, however, preparations for building the projected new asylum are well advanced. If this is constructed in accordance with the project it will be one of the best in Italy. It is hoped this asylum may be completed in about two years.

Psychiatry is now taught in all the universities of the kingdom; in some of these the professor is ordinary, as in those of Turin, Genoa, Modena, Naples, and Palermo; in others he is extraordinary, or undertakes occasional duty; and, furthermore, there are clinical institutes, some being branch institutes, as at Palermo and Florence; others in divisions of hospitals, especially arranged for the insane, in proximity to the other clinics; but the greater part in the asylums, by special arrangement with the respective administrations, which are, on the whole, well disposed to concede all possible facilities for instruction in this branch of knowledge, in which teaching has for some ten years been obligatory—a departure which has in general been welcomed and appreciated.

The anatomical (morphological and histological) tendency in

psychiatry is becoming even more prominent with us; even the most orthodox upholders of a psychological nosography recognise the undeniable importance of the study of the morphology and histology of the nervous centres for the purpose of furnishing a more solid basis for progress in psychiatry. There is some danger lest in this direction also we should go to excess by reason of the same enthusiasm which actuated us in former days when pure psychology flourished. Regarded as a whole, Italian psychiatry may be described as eclectic. The work of the various centres furnishes ample material for psychiatric study and culture, whether in the domain of criminal anthropology, histology, or clinical psychology.

A brief *resumé* may here be given of contributions worthy of consideration, published during the year, certain of which were communicated to the Italian Congress of Psychiatry, held in Florence last October. Reference has been given in this survey to those papers which are concerned with the exposition of clinical phenomena in the light of anatomical research.

Colucci, C. *On the Morphology of the Constituent Portions of the Nerve-Cell, and the Value of the Same* (*Annali di neurologia*, 1896).—Nissl's bodies are especially considered. These, alike on account of morphology and topography, and on account of their chemico-histological characteristics, should be regarded as bodies supplementary to the nerve-cell, especially connected with elaboration or reinforcement, and with regulation of nervous energy.

When Nissl's bodies are studied in different animal series, of different degrees of physiological dignity, it is seen that the disposition of these bodies is for the most part independent of that of the fibrillous substance, and that they develop by a special and individual formative activity. In addition to sundry morphological characteristics, the presence in the cellular body of filaments is noteworthy, not only in the nucleus, but also in the protoplasm. Amongst the various points made by the author for the purpose of showing that the view that the Nissl's bodies are substances concerned with nutrition or "disassimilation" is erroneous, we note the following:—(a) A nutritive substance, or a refuse material, could not exhibit aggregations of so polymorphous a kind as those presented by these bodies, nor yet so orderly and fixed an arrangement; (b) cumuli of nutritive or "disintegrative" material would present a considerable obstacle to the elaboration and diffusion of energy; and there are no reasons for supposing the existence in the nerve-cell of a mechanism of nutrition or disintegration different from what obtains in other cell-formations; (c) it is improbable that certain cells would present these substances in such abundance whilst so many others, as, for example, those of the frontal lobes, or those of certain sensory areas—which, neverthe-

less, participate quite as extensively in vital processes—are found to be poor in the same, or even without them.

Acquisto, V., and Pusateri, E. Upon the Pathological Anatomy of the Nervous Elements in Acute Experimental Uræmia (Riv. di patologia nervos. e ment.).—Uræmia was produced in two days by ligaturing the ureters. One survived 68, the other 96 hours. The alterations noted occurred in the corpus callosum, and in the protoplasmic prolongations. The nervous prolongations, the neuroglia cells, the lymphatic sheaths (pericellular and perivascular) were spared. Golgi's method shows varicose atrophy of the protoplasmic prolongations of the large and small pyramidal cells. Whilst in the large pyramids the degenerative process is limited to the peripheral portions of the apical dendrite; in the small ones it progresses further with varying degrees of intensity. There is destruction of the spinous processes which invest the secondary ramifications of the protoplasmic prolongations. Staining by methylene blue shows chromatolysis, sometimes most advanced towards the centre, sometimes towards the protoplasmic prolongations. The cell nucleus and perinuclear area present intense blue staining of a homogeneous aspect, and the nucleolus is even deeper stained. Achromatic substance would present a light blue tint. In certain large cells of the anterior horns chromatolysis has progressed, especially in the peripheral portion of the cell, as was found by Marinesco, after ligature of the abdominal aorta.

Ceni, C. The Minute Alterations which take place in the Cerebral Cortex after Lesions of the Spinal Cord (Riv. sper. di freniatria).—These alterations consist in the appearance of circumscribed swellings in one or more of the protoplasmic prolongations of the cells, which occupy the entire length of the process. Almost contemporaneously, identical swellings, though not so uniform and equidistant, appear upon the peripheral extremity of the long protoplasmic prolongation which leaves the angle of the pyramidal cell, and these advance towards the cell-body, finally involving the latter. The last to be affected are the fine, short processes which come off from the periphery of the cell. The nervous prolongation presents an extraordinary resistance. Changes are to be noted in the neuroglia-cells also. The author comments on the fact that changes in the spider-cells are always confined to small circumscribed areas about the degenerate nerve-cells, adjacent cell-elements being left intact.

Angiolella, G. On the Alterations in the Minute Vessels of certain Internal Organs in Progressive Paralysis (Il manicomio moderno).—(1) Periarteritis attacking especially the small vessels in liver and kidneys. (2) With this, and, as a consequence, inflammation of the interstitial connective tissue, with retrograde changes in the specific cells in the kidney; in the liver, only this last change. Third, the first exceptionally. (3) The appearances are in

support of the hypothesis that the primary cause of progressive paralysis is some toxic substance present in the blood-stream, the nature of which differs in accordance with the etiological factors at work in different cases. (4) There is no difference between the vascular lesions exhibited in syphilitic and non-syphilitic cases. (5) The poisonous material present in the blood would in every case be the direct cause of the vascular changes; the lesions of the interstitial tissue and the parenchyma would be brought about partly directly, partly indirectly, that is, through the medium of the inflammatory process in the minute vessels. (6) The spread of the morbid process to organs so important to the economy as the kidney and the liver, helps to explain the general decay of the organism in this disease.

Valenza, G. B. The Microscopic Changes of the Nerve-Cells under the Influence of Stimulating and Destructive Agents (Transactions of the Naples Royal Academy of Physical and Mathematical Science).—The author selected, for reasons of convenience, the electric lobe of the torpedo in his researches. This was stimulated by the faradaic current, or cauterised by a red-hot iron, removed and then stained for the microscope. The removal was carried out either immediately after the operation, or at a varying period thereafter, up to three months. The following points were noted by the author. (1) In whatever manner irritated, the nerve-cells did not present the phenomena of karyokinesis, typical or atypical. (2) It is easy to produce notable alterations in the nucleus of the cells of the electric lobe by means of the faradaic current; whereas in cells directly excited there is hyperchromatosis of the interior of the nucleus, with shrinkage of the latter, in those more remote, passing by intermediate stages, there is, on the contrary, parietal hyperchromatosis, with swelling of the nucleus. (3) After canterisation there result more notable chromatinic alterations, under the form of total hyperchromatosis and of carionexis. (4) The alterations induced in the cell-nucleus by the above processes may sometimes assume monastric or diastric forms. There would also commonly be fusion between two or more of the neighbouring cells, which frequently show no trace of the site of union, so that it would appear, in some cases, as if we had to deal, not with fused elements, but with elements interdependent. (5) After rapid cauterisation the cell-protoplasm acquires the most curious appearances, due to irregular transposition of the chromatophile elements. (6) The fatigue of the nervous elements in consequence of electric stimulation of moderate intensity exhibits itself in morphological alterations varying according to their distance from the irritated point, perhaps also according to their state, degree of evolution, and energy. (7) The cells of the electric lobe of torpedos vivisectioned during stimulation never exhibit displacements or contractions of the karioplasm, which occupies all the space defined by the

nuclear contour. (8) It is not the case that the protoplasm, the prolongations, the nucleus and nucleolus of the nerve-cell enlarge during activity and diminish in fatigue. On the contrary, they preserve in the various functional states the same dimensions.

Colella, R. A Contribution to the Pathology and Pathological Anatomy of Tabes Dorsalis (Annali di neurologia).—A case of tabes dorsalis with syphilitic infection, accompanied by amyotrophic paralysis of the lower limbs, paresis of the oculo-motor muscles, hemianopsia, and changes in the fundus oculi, and, in the later stages, by decubitus and psychical disturbances. The author bases the following conclusions upon the microscopical examination. (1) In tabes every portion of the neuro-muscular system may be diseased. In such alterations as those of the spinal cord and of the oculo-motor nuclei, of the mesencephalon, of the peripheral nerves and muscles, are to be sought the pathology of the most diverse disturbances of motility, of sensibility, of the state of the reflexes, of the special senses. Similarly, a causal connection is indisputable between the alterations in the cerebral cortex and the psychical disorders of tabes. (2) Amyotrophic paralysis of considerable gravity, and diffuse, may be noted in tabes when the grey matter of the anterior horns of the cord and the peripheral nervous system present insignificant histological changes, or changes which are very localised. (3) In such instances the paralysis depends principally upon a generalised and profound change in the anterior roots of the spinal cord, consisting in a parenchymatous neuritis, there being further foci of neuritis here and there in the roots.

Pellizzi. The Secondary Degenerations following Cerebellar Lesions.—This research bears upon the degenerations secondary to ablation of the median lobe of the cerebellum. Marchi's method was the one employed. Consecutive to and dependent on the above lesion are: (a) Total degeneration of the fibres of the "connecting arm" (commissure of cerebellar hemispheres; crura ad pontem), and of the fibres emanating therefrom; (b) degeneration of the internal fibres of the median peduncle, and of the fibres of the deeper layers of the pons; (c) all the degenerative states which are met with in the pyramidal tracts; (d) the partial degenerations in the various portions of the lemniscus; (e) the degeneration of the corpus trapezoides, and of the ventral and median cerebellar tracts, and of the external arciform fibres.

Bianchi. A Clinical Contribution to our Knowledge of the Functions of the Frontal Lobe (The Congress of Psychiatry, 1896).—The patient, aged 31, in the marine service, sustained a severe injury to the head in July, 1894, followed by grave cerebral shock. He was unconscious for some days. In May, 1895, complaint of headache at the seat of injury, which became progressively more intense. At the same time right-sided external strabismus became manifest, and progressive diminution of acuity of vision and

acuteness of hearing. In September two generalised convulsions. In April, 1896, the blindness and deafness became complete. Ophthalmoscopic examination showed papillary stasis and neuro-retinitis. In this plight the patient attempted suicide several times, and consequently was received into the Clinique. On examination there was found, in addition to blindness and deafness, diminution of smell and taste; the tendon reflexes were a little exaggerated on the left side; there was dilatation and rigidity of the pupil on that side, and, on the same side, slight paralysis of the inferior part of the face. The mental functions were practically in abeyance. The pupillary dilatation, the facial paralysis, the neuro-retinitis, the localised pain, the hemianopsia—these considerations led the author to make a diagnosis of tumour of the right frontal lobe, and to decide on an operation. The operation of trephining revealed a tumour, which it was judged inadvisable to extirpate, in view of ill-defined limitation posteriorly, and of its extensive occupation of the frontal lobe. Moreover, microscopical examination showed the growth to be an endothelioma. The patient died in two months. This case is decidedly opposed to the view of Munk and Luciani, who assert that the frontal lobes contain the centres for the muscles of the trunk and the nape of the neck; since, although carefully and frequently examined, the patient had always normal gait and power of equilibration, and never showed the slightest unsteadiness or paralysis, or contractions in the muscles of trunk or neck. The olfactory disturbances were explained by the presence of an area of softening in the fore part of the limbic lobe.

Obici and Tambroni. Cerebral Tumour: A Clinical Contribution to the Study of the Functions of the Frontal Lobe (Italian Psychiatric Congress, October, 1896).—This was a case of glioma of the left prefrontal lobe. The authors refer especially to the symptoms exhibited in accordance with diagnostic criteria laid down by Professor Bianchi; in particular, the special form of mental enfeeblement, characterised by loss of the power of abstract conception, defect in the power of psychical orientation, irritability, enfeeblement of character, and of altruistic sentiment, tendency to suicide. It is worthy of note that there was dilatation of the pupil on the side opposite the lesion. Seven months after the commencement of the disease convulsions and paresis became manifest, and an apoplectic seizure supervened. There was at no time any alteration of the linguistic faculty.

The tumour was situated over the orbital arch, and occupied a large part of the left prefrontal lobe. There was no excess of ventricular fluid, nor intracranial pressure.

Stefani, N. On the Physiological Action of the Urine of the Insane (Italian Congress of Psychiatry, 5th-9th October, 1896).—Experiments were performed on rabbits with the urine of 20 insane persons, suffering from acute forms of the malady, and

exacerbations, and with the urine of three healthy individuals. The specific gravity of the urine was reduced in all cases to 1015 by the addition of distilled water. The fluid was then injected at the rate of 3 ccm. per minute, and that amount for each kilogramme of weight of the animal. In other experiments the specific gravity of the fluid was raised to 1030 by means of evaporation at a lower temperature. The author did not think it advisable to heat the urine at 37 degrees C. The injection was made into the auricular vein of the rabbit. The toxicity of the urine of the insane varies in different individuals, and even in the same person there are rapid variations. The physiological action of the urine of the insane does not differ from that of normal urine, except by greater intensity. Convulsive and myotic effects are frequently augmented.

Vassale and Domaggio. On the Alterations in the Spinal Cord in Dogs, in which the Parathyroidal Glands had been Removed (Ibid.).—The only symptom presented was spastic paralysis. In complete thyroidectomy, spinal lesions are very rarely observed; in dogs in which the parathyroidals have been removed, however, lesions have been noted in 6 or 7 instances. Degeneration of fibres is observable even after the fourth day. The author emphasises the anatomico-pathological difference which clearly exists between primary and secondary degenerations, as can be demonstrated by using various staining methods. In secondary degeneration Marchi's reaction never fails during the first stage; thereafter the same applies to Weigert's method. In primary degeneration, with varicose atrophy of the axis-cylinder, neither Marchi's method nor that of Weigert gives any result.

Andriani, G. Experimental Researches upon the Cerebral Localisation of the Tactile, Olfactory, and Gustatory Senses (Ibid.)—The author has arrived at the following conclusions from his experiments upon dogs. (1) In the posterior cortical zone of the fissure of Sylvius, and in the subjacent white matter, as also in the grey and white matter of the hippocampal gyrus; there are without doubt centres and paths connected with the tactile sense, met with especially as one passes from superior to inferior planes. (2) The disturbances in this sense which are observed in ablation, more or less extensive and profound, of these regions, are noticeable principally on the side opposite the lesion, and consist in a retardation—in marked cases an abolition—of tactile perception, with errors of localisation. These disorders diminish gradually, and disappear after 40 to 50 days. (3) The tactile disorders appear proportionate (especially in respect of duration) to the extent of the ablation practised on the posterior Sylvian and hippocampal regions. (4) In excisions, mono- or bilateral, of the posterior Sylvian zone, and of a portion of the hippocampal gyrus, if the anterior one-fourth or one-third of this gyrus be spared, there are observable, besides the tactile disorders described, slight transient

disorders of smell, but no disorder of taste. If, on the contrary, the excision approaches or touches the anterior portion of the hippocampal gyrus, disturbances of smell become manifest, preponderating on the same side, but not of long duration. (5) If the anterior portion of the hippocampal gyrus of one side is destroyed to the extent of an olive stone, there results, in addition to other phenomena, great obtuseness, with perversion of taste and obtuseness of smell. (6) After unilateral excision of the limbic gyrus and of the marginal gyrus, immediately behind the sigmoid gyrus, as far as the splenium of the corpus callosum, there is bilateral abolition of taste (with tendency to slow improvement until the fortieth day), and light, transitory disorders of smell and vision.

From experiments on apes the author concludes (7) that removal of the cortex of the inferior half of the second temporal gyrus, and of the anterior half of the hippocampal gyrus, on one side, produces notable hypo-æsthesia in the other side, and diminution of tactile sensibility on the same side as the lesion; further, bilateral diminution of olfactory sensitiveness, most marked on the same side; and also slight amblyopia of the external segment of the retina on the side of the lesion. Hearing, taste, and the sense of pain remain intact. If the same portions of the second temporal and the hippocampal gyrus are excised on the other side also, there results: Conspicuous tactile anæsthesia on the side opposite to the (second) lesion, diminution in olfactory acuteness on the side of the lesion, marked amblyopia of the internal segment of the opposite retina, blunting of the auditory sense on opposite side. Taste and the pain-sense remain intact.

In every case the tactile disturbances diminish progressively during the second and third weeks.

Capriati, V. Influence of Electricity upon the Cerebral Circulation in Man (Annali di neurologia).—Two individuals exhibiting apertures in the cranium were the subject of study, the modifications of the cerebral pulse under the action of the galvanic and faradaic currents, as applied to the head, being observed; also as applied to the cervical sympathetic; and the same under general faradisation. From these observations it appears:—(1) That in applications of the galvanic current, whether directly to the head or indirectly, the resulting modifications concern especially the state of the vascular walls. (2) Under the faradaic current, on the contrary, it is the amplitude of the pulse which is particularly affected. (3) With the galvanic current there is vaso-dilatation when the application is made to the head transversely; vaso-constriction when longitudinally, or when the sympathetic is stimulated, provided that one pole—whichever it may be—is placed on the nape of the neck. The result is then probably due to a direct action of the galvanic current on the vaso-motor centres of the bulb. (4) In galvanisation of the sympathetic, in

addition to vaso-constriction, there are also profound modifications in the volume of the brain. Since such modifications do not occur in any other form of the other modes of application, and are constant in excitation of the sympathetic region, they must be referred to a special action of electricity on this region. (5) In all applications of the faradaic current the ultimate result is always augmentation of the blood-flow to the brain (hyperæmia).

Pianetta, C. Contribution to the Study of Puerperal Insanity (Annali di neurologia).—This is the outcome of 88 observations. In 11 cases the disease had developed during pregnancy, in 35 in the puerperal period proper, in 42 during lactation. The author has ascertained:—(1) That puerperal insanity, especially that developed during pregnancy, is rare. (2) That the disorder cannot be attributed etiologically to a specific condition peculiar to the state of pregnancy, that of the puerperium, or of lactation, but that such states ought rather to be considered as occasional causes of the disorder. (3) That the mental conditions which developed during the puerperal state have no distinct features whereby they may be distinguished from psychoses arising independently of such state—whether as regards clinical course or mode of death; the same symptoms are frequently present in maniacal confusion and stupor. (4) That the prognosis is generally fatal, and in arriving at it the ordinary criteria, which obtain in mental disorders generally, are followed, regard being had to etiological data and the form of mental disorder which is presented by each case.

Buccelli, N. On Certain Little-Known Alterations of Cutaneous Sensibility in Acute Dementia (Rivista Sper. di Freniatria).—From a minute and careful examination of cutaneous sensibility in five cases of this disease the author has arrived at the conclusion that in some cases it is altered, especially the sensibility to pain and heat, which is sometimes morbidly exaggerated, sometimes blunted. The alterations are well defined, symmetrical, run a variable course, disappearing either spontaneously or by the action of stimulant measures, often before the general disorder; but sometimes remaining, though in a milder degree, until the patient recovers.

FRENCH RETROSPECT.

By Dr. Macevoy.

Psychical Asthenia and Obsession. Treatment by Suggestion.

A short account of a clinical lecture on this subject by Professor Raymond, of the Salpêtrière Hospital, is given in the *Revue de l'Hypnotisme* for June, 1896. It concerns a young woman, aged 28 years, formerly telegraph clerk. Her family history is good, and she has had fair health, except that at the age of eight she

had typhoid fever. At the age of 12, the time of her first communion, she began to have numerous religious scruples—fear of unsatisfactory confession to the priest, dread of a “bad communion.” These lasted two years, but became attenuated. Married at the age of 20, she had one child, the death of which, eighteen months ago, gave rise in her mind to the deepest grief. She now became intensely devout, and full of religious ideas. On one occasion she was noticed in an attitude of threat, shouting “No, no, no!” to some imaginary enemy, and refused to explain the meaning of this performance. For about a year it was frequently repeated, and the patient appeared to be dominated by a fixed idea which she kept secret, and sank into a condition of mental and physical apathy.

A fortnight ago she revealed her secret. Since the death of her child she could not resist the tendency to associate the name of God with all kinds of offensive epithets: pig, beast, etc. But, while perpetually awed by this imperative idea urging her to blaspheme, she manifested her resistance to uttering the bad names by crying out “No, no, no!” At the same time she feels that if she ceases to curse Providence, something dreadful will happen, her husband will die, etc.

Here, therefore, is a case where a moral shock determines a condition of psychical asthenia; a fixed idea appears—the resultant of a series of reflections which we ignore and which probably the patient herself ignores. These ideas, which may have been conscious once, and have become little by little sub-conscious, are at times very difficult to trace. Hypnotism may reveal them, or occasionally interviews with patients which inform one of their modes of thought. In this case, an idea of injustice related to the death of her child, seems to manifest itself in reproaches and curses hurled at Providence. Owing to the religious convictions of the patient these are fought against, hence her resistance and protest of “No, no, no!”

It is therefore important to look for the primitive idea in these cases, the cause of the delirium (the feeling of injustice at the death of the child, as in this case). For one's endeavour should be, in addition to general treatment, to substitute, by suggestion, either during hypnotic sleep or in the absence of sleep, a new idea, just and reasonable, for the false idea which determines the psychical troubles.

In conclusion, Professor Raymond says:—“Similar cases to this are very frequent; they are well worth knowing, for they necessitate careful inquiry, with consequent indications for the use of a therapeutic agent of a particularly delicate nature, but which gives the best results (suggestion).”

Alcoholism in Paris.

Professor Raymond (*Le Progrès Médical*, July 18th, 1896), comparing his experience of 1887 with that of to-day, is of opinion

that alcoholism is progressing in Paris with giant strides. He has taken statistics of the number of alcoholics applying to be treated at his clinique at the Hôtel Dieu, and he is careful to explain that by an "alcoholic" he means an individual who has become socially a cypher—unable to work, and dependent on society (the hospital, the asylum) for his immediate wants; not simply a "drinker."

In February, 1896, 1,106 general patients applied for treatment, 62 of whom were confirmed alcoholics; 14 of these were phthisical, in whom other causes of phthisis (except alcohol) were excluded.

Among the 1,106 patients were 677 men and 429 women, and the 62 alcoholics were made up of 38 men and 24 women, giving, therefore, a proportion of 5·6 per cent. among the men and 5·5 per cent. among the women. He believes that alcoholism in women is increasing terribly.

Professor Raymond is convinced that these numbers are below the reality, for he has only taken into account (including of course phthisical drunkards, who are, one must admit, the type of these social cyphers) inveterate alcoholics, who, after nights of insomnia or of perturbed sleep by painful dreams, wake up in a broken-down condition, unable to go to work, and in whom loss of appetite, digestive troubles, bring about a rapid dissolution. He has limited himself to those who cannot sleep, who cannot eat, cannot work, cannot resist, and are doomed to die very soon. And these, he adds, at the Hôtel Dieu in February last, numbered 62 out of 1,106 patients examined. Assuming that this is more or less the experience of twelve other hospitals in Paris, we have 10,000 patients in one year rendered useless by alcohol. It is easy to estimate what this state of affairs costs the "Ville de Paris."

The majority are single, and absinthe and "rum" are the liquors mostly consumed, three francs out of five francs being probably spent on these poisons.

One feature in these cases is the apparent unconsciousness of harm in their habits. To many of them it seems natural to drink daily four, five, or six glasses of spirits, and many in apparent good faith protest that they do not drink immoderately. In conclusion Professor Raymond adds:—"What saddens one especially, in presence of these men and women in comparative early age thus overpowered, is the thought of the future of the Parisian race, and one is almost led to the cruel conclusion that Nature is perhaps right in eliminating them."

On Chemical Demorphinisation.

Dr. Albrech Erlennmeyer, who is responsible for the introduction of the rapid method of cutting off morphia in the treatment of morphinomaniacs, in *Le Progrès Médical* of August 1st, 1896, draws attention to a further improvement in the treatment of

morphinomania by the use of alkalies, a method which he has used during the last three years at the Bendorf Asylum with much success. The clinical observation of certain symptoms which are prominent when morphia is suppressed in cases of morphinomania reminds one forcibly of the symptoms of dyspepsia from excessive acidity in the stomach.

One finds in both conditions, not only direct gastric symptoms such as intestinal pain and oppression, nausea, vomiting, diarrhoea with frequent evacuations, but also such indirect symptoms as sensation of heat in the back, irritability of the muscles of the trunk and limbs, and painful sensations in the legs.

Moreover, examination of the contents of the stomach of a patient who has ceased to take morphia, or is only taking very small amounts, shows the presence of a large excess of hydrochloric acid. The explanation of this condition is as follows. The constant elimination of morphia through the walls of the stomach in cases of morphinomania leads to a cessation of the function of the gastric glands—they are, so to speak, narcotised; so that there is deficiency of hydrochloric acid. After suppressing morphia, the opposite condition is induced; the denarcotised glands recover their functions, and the stomach becomes flooded with acid, with the result of irritation of gastric nerves, producing the so-called symptoms of suppression: vomiting, abdominal pain, colic, diarrhoea, heat and pains in the back, restlessness of limbs and trunk, insomnia, acceleration of the pulse.

Accepting these data, Hitzig first tried the rational treatment of this condition. In a patient so placed (that is after suppressing morphia) he removed the hydrochloric acid by washing out the stomach, and in addition introduced an alkaline solution (Carlsbad water). "Abstinence symptoms" practically did not appear, and the patient, in whom several attempts at cure had been made at different times, pronounced this treatment as the easiest to bear.

Dr. Erlenmeyer has dispensed with the use of the stomach pump, and simply relies on neutralisation of the hydrochloric acid in the stomach by the use of Fachingen water (containing 35 gr. of bicarbonate of soda in 1,000 gr.), about one litre being given in 24 hours. The effect is most satisfactory; no direct gastric symptoms appear, no vomiting, no colic, and instead of diarrhoea—which in cases treated by the old methods was very troublesome—there is constipation. As regards reflex nervous symptoms, there are none, or they are so slight that the patients do not suffer from them.

In this way 30 patients have been treated during the last three years with the greatest comfort. The craving for morphia, however—the psychopathic symptom—remained, and it was interesting to note that, whereas the stage of suppression of morphia, in the case of morphinomaniacs of ten or twenty years' standing, was

unaccompanied by physical suffering, yet the urgent desire for morphia persisted, and patients clamoured for it.

In carrying out an absolutely systematic treatment of these cases, Dr. Erlenmeyer therefore proposes that hydrochloric acid should be given during the morphinisation period. In this way the anacidity of the stomach will be avoided, and the gastric nerves will be kept subjected to the influence of the acid. The author believes that the chemical treatment of the morphia habit offers much promise of success in the future; and while conscious that we have much to learn about the mode of action of morphia and the character of its products of transformation in the organism, he hopes this work may be a useful contribution to the subject.

Paraldehyde as a Hypnotic for the Insane.

Dr. Daman, of Liège (*Bulletin de la Société de Médecine Mentale de Belgique*, June, 1896) thinks that with the plethora of new hypnotics, there is a danger of discarding such a useful drug as paraldehyde for procuring sleep in the insane. The experience of its use, in the clinique of M. Francotte, places it in the first rank, being far safer than chloral, opiates, chloralose, etc. It is safe in cardiac cases; does not upset the digestion (it was given for six weeks with the greatest benefit in a case of generalised eczema with catarrh of the digestive tract), and no dangerous symptoms are produced. With the exception of two cases, Dr. Daman has not known it to fail in procuring refreshing sleep, without any consecutive headache or malaise. Of course it is not an analgesic like opium. Paraldehyde may be given during long periods without losing its effect, and without the necessity of increasing the dose; in one case, a patient took a drachm nightly for a year. The taste of the drug, and the persistence of its odour in the breath for several hours after its ingestion are drawbacks; but very few patients object to it on this account. A combination with tincture of orange peel and sugar practically overcomes these objections. Tincture of cloves may also act well as a corrective, but it is inferior in this respect to tincture of orange. One drachm of paraldehyde at night is almost invariably a suitable dose.

Observations on Prestidigitators.

Professor J. Jastrow (Translation from "Science" in *Rev. Scientifique*, 20th June, 1896) resumes some experiments made upon Messrs. Hermann and Kellar, well-known prestidigitators, bearing upon tactile sensibility, visual perception, simple and complex reaction-time. He finds that they differ especially from ordinary subjects in the rapidity of their response to tactile and visual stimuli. This rapidity, which is present also with Mr. Kellar in the case of auditory stimuli, is not evinced in complicated reactions, in which neither subject reaches an average

standard. Rapidity of movements is considerably above the average in both prestidigitators. As regards visual perception, the advantage is only partial and is not striking, taking the whole of the experiments. In the experiments dependent upon tactile and muscular perception, they are rather below the normal.

The experiments, Professor Jastrow says, are not very conclusive; they show nevertheless that it is quite likely that exceptional skill obtained by an exclusive and specialised training may have but very little influence on other faculties. "The question is so little known, and the short series of experiments is so open to accidental errors, that it is wise to defer all hypotheses."

Psychoses in Old Age.

Dr. Ant. Ritti introduced a discussion on psychoses in old people at the Congress of Alienists and Neurologists, held at Bordeaux, in August, 1895 (*vide Reports of Congress*, Vol. i., G. Masson, 1896), limiting the subject to psychoses occurring in old people of previous good mental health, and therefore excluding senile dementia, and mental troubles consecutive to brain lesions (softening, hæmorrhage). The frequency of these psychoses is discussed, stress is laid upon certain characteristics which they present, and there are interesting remarks on prognosis.

A few general considerations on the psychology of old age precede the work, and reference is also made to the legal bearing of the psychoses—as regards testamentary capacity, legal responsibility, etc.

The following are the general conclusions of the author:—

1. By psychoses of old age are meant the mental affections which supervene late in life in individuals who have not hitherto shown signs of any psychical trouble.

2. The most frequently observed psychoses in old age are, in order of frequency: melancholia in different forms, especially simple melancholia and anxious melancholia (excited); mental confusion, mania, moral insanity, systematised delusional insanity.

3. The excited melancholia of old age is one of the most clearly defined by the constant agitation, anguish, violent impulsiveness, refusal of food under the delusion that human flesh, rotten food, is administered; by the tendency to obscenity, insomnia, etc.

This form is very curable.

4. The insanity of persecution which begins in old age presents also special characteristics. It follows the same course as in adults, but is more rapid; it presents hallucinations of vision, which are not accidental, but are a part of the disease, and enter to some extent into the constitution of the delusions.

5. Systematised delusional insanity, whether it be insanity of persecution or megalomania, may manifest itself in old age with the same coherence, the same activity, the same bearing as in adult

age. Hence one may conclude that the psychoses appearing in the last phases of life are not necessarily tinged with that intellectual falling off which is described under the name of *senile dementia*.

6. One of the insane manifestations, which is present in nearly all psychoses of old age, is eroticism. Whether we deal with mania, or melancholia, or delusional insanity, one finds in all the patients some over-activity in the domain of the genital sense, as evidenced by words, gestures and acts, often the most obscene.

7. The study of somatic or bodily symptoms is of the greatest importance in the psychoses of old age. Troubles of circulation, cardiac lesions, renal lesions are very frequent. It is probable that the frequency in old people of mental confusion (stupor) is due to some auto-intoxication (? uræmia).

8. The causes of these psychoses must be searched in heredity, in the organic modifications which accompany old age, in the diminished resistance which the senile brain opposes to moral and other shocks.

9. The prognosis of these affections is not absolutely unfavourable. The cure of certain psychoses in old age is almost as frequent as that of the insanities of middle age.

10. The study of psychoses in old age is, in a measure, the complement of that of the psychoses of old age. The insane, and especially cases of circular insanity, and insanity of persecution, reach the extreme limits of old age without falling into dementia. As a rule, it is only as the result of some cerebral stroke that the first symptoms of loss of the intellectual faculties appear; but we are then in the presence of organic dementias and not of "insane" dementias (*i.e.*, secondary dementia).

11. As regards the legal relations of the psychoses of old age, they come under the same rules which govern the law of the insane. Cases relating to the question of testamentary capacity probably arise more frequently than those concerning legal responsibility (crime, etc.).

Biological Study of Pain.

In the *Revue Scientifique*, of August 22nd, 1896, is a publication of Professor Charles Richet's interesting and philosophical communication on pain to the Psychological Congress of Munich. The subject of pain is investigated from the physiological side, and the author shows that pain results from any cause which profoundly modifies the condition of a nerve. As a consequence of any strong stimulus applied to a nerve there is local disorganisation, and at the same time powerful reflexes of a defensive character, accompanied by a special reaction, which is entirely subjective—that is pain. A fundamental character of pain, upon which Professor Richet lays stress, is its duration; so that with a stimulus of very short duration the resultant pain may be indefinitely prolonged

in the memory; with the consequence that we are so constituted that our highest endeavours are to avoid pain. And therefore also, concludes the author, we are so organised that we try to avoid all causes of destruction and perversion of our tissues. Nature, in short, leads us to consider pain as the supreme evil (whatever stoics may say), and it is in this respect that the function pain is useful to life; i.e., a most powerful means of preventive defence.

Incidentally, Richet, in the course of his article, is led to make a confession of faith, namely, that the principle of final cause, which formerly seemed to him ridiculous, strikes him, after mature reflection, as absolutely necessary in physiology; and that each element of our organism, each detail of a physiological function, has an end in view which is always the same—that is an optime and a maximum of life.

Not to fear pain is a grievous error; and we shall conform to the natural law in avoiding pain both on our account and for the sake of others.

RETROSPECT OF PHYSIOLOGICAL PSYCHOLOGY.

By Havelock Ellis.

Illusions and Hallucinations in Normal Life.

Dr. C. E. Seashore has recently carried out at Dr. Scripture's laboratory at Yale University a detailed investigation which is of the greatest interest to psychologists generally, and by no means least to alienists (C. E. Seashore, "Measurements of Illusions and Hallucinations in Normal Life," *Studies from the Yale Psych. Laboratory*, Vol. iii., 1895). Although illusions of weight as conditioned by size, and similar fallacies of perception, have been studied from time to time, our chief knowledge of them has been founded on the abnormal phenomena observed in the insane, and on those more or less reliable anecdotes so carefully collected and sifted by the Psychical Research Society in their great Census of Hallucinations. Dr. Seashore starts from the familiar illusions of weight, but he carries the matter a distinct step beyond the point yet reached. He shows that illusions of all the senses, and even developed hallucinations, occur regularly and normally in trained observers working in the laboratory, and in spite of efforts to guard against them.

The first series of experiments, here fully detailed, was made with two sets of blocks, one set varying in size, but of uniform weight, the other varying in weight, but of uniform size. It was found that there is a uniform, regular, and persistent illusion; "the influence due to size in the determination of weight within a middle range is almost as patent as an absolute difference in weight." The larger bodies of those having the same weight, but

different size, are always under-estimated, the smaller over-estimated. Even when the observer tried the experiment twice a day for ten days the results varied but slightly. It was then sought to ascertain how far the illusion would persist when its nature and the actual relations of the weights were known to the observers. For this purpose ten professors and graduated students, who had all done special work in psychology, and whose powers of judgment could be depended on, were carefully tested, the whole apparatus being explained to them. It was found that even when the observer knows its nature, extent, and course, the illusion still persisted, though to a somewhat modified extent.

Among the further experiments may be mentioned those on hallucinations of warmth. The apparatus consisted of a wire heated by an electric battery. It takes an appreciable time for a person touching the wire to perceive the heat. This is explained to the observer, who has to say "Hot" as soon as he perceives the heat; the experiment is repeated a considerable number of times, and the average period required duly noted; then, unknown to the observer, the experiment is repeated without the current being turned on, and almost invariably the observer still feels the heat, after about the usual interval, although there is no heat to feel. "From these experiments," Seashore remarks, "I conclude that a mental image of a definite liminal sensation of heat can be realised in a peripheral sensation in the absence of any physical stimulus if there is no incongruity in the phenomena which serve as suggestions."

Experiments with photometric changes in gray showed similarly that visual illusions of deepness of shade—whether from light to dark, or from dark to light—can be produced with great regularity by securing expectant attention.

The most striking experiments, however, are those which demonstrate the ease with which hallucinations of a definite object can be produced. A spheroidal blue bead, two or three millimetres in diameter, was suspended by a fine black silk thread in front of a black surface; by a concealed device the bead could be withdrawn and replaced without the observer's notice. The experimenter was seated at a table, ostensibly to keep record, but really to manipulate the apparatus. A tape line was stretched from the apparatus to a point some six metres in front of it. The observer was first shown the bead and then required to go to the further end of the tape line and walk slowly up towards the apparatus until he could see the bead distinctly. When he saw the bead he read off the distance on the tape line. The observer was put through this experiment ten times, the distance at which the bead was seen varying but slightly. Before the eleventh trial the experimenter pulled a cord which slid the bead behind the frame. The observer, not knowing this, walked up as usual, and when he came up to or a little beyond the point where he expected to see

the bead he generally *did* see it, and read off the distance as before. As a rule the 11th, 16th, 18th, and 20th trials were made with the bead withdrawn. About two-thirds of the persons experimented on were hallucinated. They knew when, where, and how to see the bead, and that was sufficient to project the mental image into a realistic vision.

Somewhat similar results were obtained in experiments on touch, electrical stimulation, sound, taste, and smell, and these results are fully illustrated by charts.

Dr. Seashore concludes that: (1) Such hallucinations and illusions are normal phenomena which may be reduced to law; (2) they are due to suggestion; (3) the main element in such suggestion is expectant attention.

It is clear that we may rely upon hallucinations and illusion as a factor in daily life to a much greater extent than we have yet ventured to do. "If a scientific observer," as Dr. Seashore points out, "in the bead experiment sees the bead as real, although there is no bead, I do not think we can set any limit to what an excited, imaginative person may really see under circumstances favourable for illusion."

Normal Motor Automatism.

"Double personality" and similar terms have been invented to describe the remarkable developments of the sub-conscious automatic life which occasionally occur, and which are often regarded as essentially different from the automatic movements which occur in normal life. An attempt has lately been made in the Psychological Laboratory of Harvard University to determine the limits of normal automatism, to show, if possible, that it is really able to explain the second personality, and incidentally to observe carefully the process by which a reaction becomes automatic (Leon Solomons and Gertrude Stein, "Normal Motor Automatism," *Psych. Review*, Sept., 1896). The two investigators—both in good health and not liable to any hysterical or abnormal psychic phenomena—experimented on themselves, and their observations dealt with the following points:—(1) General tendency to movement without conscious motor impulse; (2) tendency of an idea to pass into involuntary and unconscious movement; (3) tendency of a sensory current to pass over into a sub-conscious motor reaction; (4) unconscious memory and invention.

(1) A planchette (in the form of a glass plate mounted on metal balls, with metal arm holding a pencil) was used in the first series of experiments. The subject placed one hand firmly on this, and proceeded to become as deeply interested as possible in a novel. In this way it was found that, though the arm does not move spontaneously, any movement once started tends to continue of itself. By slightly moving the planchette it is easy to start the arm moving, and this movement continues unconsciously provided

the subject is sufficiently absorbed in the novel. When he is conscious of the movement of his arm it appears *extra-personal*. This feeling of extra-personality appeared in all the experiments wherever knowledge of movement was gained from sensation without previous feeling of intention. From these experiments it was concluded that in normal subjects there is a general tendency to movement from purely sensory stimuli, independent of conscious motor impulse, but that under ordinary circumstances this tendency is inhibited by the will. There is a very strong tendency to stop automatic movements and to bring them under the control of the will.

(2) In this series of experiments the subject held a pencil and moved it continuously over paper, as though writing, while continuing to read a novel. The writing movements quickly became automatic, and there was a very decided tendency to write down simple words like "the," "in," "it," &c. Sometimes the writing was completely unconscious; more often the subject knew what was going on, but obtained this knowledge by sensations from the arm, and was not conscious of a word until after it was written; the writing of the word seemed to attract the subject's attention. When the word written was a long one the subject became conscious of it soon after it was started.

(3) Still holding the pencil in constant movement and still keeping attention as fully as possible on the novel, the subject now attempted to write at dictation. This was the most difficult experiment attempted, and required most training. At first there was only a painful consciousness of the experiment, and the words read had no meaning. The dictation was attempted at intervals, and after a few hours' practice it was found possible to avoid turning the attention from the story—especially when this reached interesting points—and cases of pure automatism began to occur. The first thing to disappear is the feeling of effort. Then the motor impulse disappears; the word is heard, but that is all; "the writing is conscious but non-voluntary, and largely *extra-personal*. The feeling that the writing is *our* writing seems to disappear with the motor impulse." Real automatism—that is, the dropping out from consciousness of the heard sound and the return sensation from the arm—comes only at intervals, but it comes whenever the attention is sufficiently distracted. The return to consciousness is always on the motor side, from the hand, not from the ear. A greater degree of unconsciousness was found to appear quite suddenly. (The authors give reasons for believing that the unconscious is really unconscious, and not merely due to forgetfulness.) Another experiment under this heading was in automatic reading. The subject reads in a low voice, while the experimenter reads to him. "If he does not go insane during the first few trials" the subject quickly learns to continue reading while concentrating his attention on what is being read to him. "Whenever it happened

that the subject, after a period of automatic reading, suddenly began to *hear* what he was reading, his voice seemed as though that of another person."

(4) In this series it was found possible to obtain the curious phenomenon of one person unconsciously dictating sentences which the other unconsciously wrote down, while both were absorbed in some story.

The investigators emphasise the importance of attention. The phenomena only occurred when it was possible to inhibit attention from certain classes of sensation. "Whatever else hysteria may be, it is a disease of the attention. An hysterical anæsthesia or paralysis is simply an inability to attend to sensations from that part. The 'second personality' is simply the natural correlate of the anæsthesias, when these have become fixed. When they are variable, irregular sub-conscious acts form their correlate."

The Effects of Loss of Sleep.

In view of the fact that our knowledge of the physiological and mental effects of enforced abstinence from sleep is at present solely confined to Dr. Marie de Manacéine's experiments on dogs, no experiments having been made on human subjects, Professor Patrick and Dr. J. A. Gilbert, of the Psychological Laboratory of the University of Iowa, resolved to investigate the matter, and their results have now been issued ("On the Effects of Loss of Sleep," *Psych. Review*, Sept., 1896). It was proposed to keep the subjects awake continuously for about ninety hours, making physiological and psychological tests upon them, at intervals of six hours, in respect to reaction-time, discrimination-time, motor ability, memory, attention, etc.; to observe the general effects of insomnia, and also the depth, amount, and character of the sleep that finally resulted. This plan was successfully followed with three subjects who were constantly attended by one or two watchers. The first subject, an assistant professor at the university, and in perfect health, suffered much the second night from sleepiness, etc., but much less the third, the time of dawn being always the period of greatest sleepiness; the most marked effect in his case (not seen in the other cases) was the presence of hallucinations of sight. These were persistent after the second night, the subject complaining that the air was full of dancing particles like gnats, but coloured red, purple, or black. His sharpness of vision was not impaired. He had never had hallucinations before, and they disappeared entirely after sleep. There was a steady increase in weight during the experiment, found in the other two cases also, and always followed by a marked decrease after sleep. The dynamometer showed a gradual and steady decrease in strength of both grip and pull, regained after sleep. The reaction-time increased steadily, also dropping to the normal after sleep; in one of the cases, however, reaction-time was not lengthened. The

acuteness of vision uniformly *increased* during the experiment, dropping to below the normal after sleep; this tendency was found in all cases. Memory became very defective and power of attention was largely lost; one subject found it impossible to commit to memory after twenty minutes what normally took him two minutes. In only one of the subjects did it appear that there would have been danger in prolonging the experiment over ninety hours; in this case the temperature after a brisk walk in the cool air sank as low as 95.6°, but soon rose again. The subjects only found it necessary to make up a portion of the time lost from sleep, from 16 to 35 per cent. This is put down partly to the greater depth of the resulting sleep, partly to the fact that even when apparently awake the subjects were sometimes partially asleep, and one reported a dream while he was standing up gazing at a piece of apparatus. Analysis of the urine showed not only that there was increased secretion of nitrogen and phosphoric acid, but that relatively more phosphoric acid was excreted than nitrogen. Full tables of results for each subject accompany the paper.

A Study of Fears.

Professor Stanley Hall, the President of Clark University, and the editor of the *American Journal of Psychology* and the *Pedagogical Seminary*, is undoubtedly the leader of the new school of experimental psychology in America, and most of the younger American workers and teachers who are doing good work in this field were trained at Clark University and inspired by Professor Hall's spirit and methods. While he is in sympathy with all fruitful branches of psychological research, both normal and morbid, he has more especially developed the method of collective investigation, very largely by the assistance of collectors whom he has himself trained. The method is illustrated by an elaborate study just published ("*A Study of Fears*," *Am. Jour. Psych.*, Vol. viii., No. 2, 1897).

Fears, in the sense here used, are on the borderland of the morbid, but are mainly normal, since nearly every person at some period of life has been possessed by one or more of them. They cannot well be studied in the laboratory, and lend themselves to the method here adopted. As the author remarks: "The many instinct feelings come to but very partial and incomplete expression in any single individual. To bring them out clearly, averages, mosaics, composites from many lives may, I think, be used to show both the relative depth and the vastly wider range of psychic experience."

The present report is not final. It is, however, based upon the returns to a syllabus issued from Clark University to 748 persons, mainly teachers, and these returns record the chief fears, 6,456 in number, of 1,701 people, mostly under 23 years of age. These

fears include that of thunder and lightning, which comes first (603 cases), followed by reptiles (483), strange persons (436), darkness (432), fire (365), etc. (These figures do not, however, give us the real order of importance of fears; such an inquiry only reveals the more avowable fears; the less avowable fears flourish on the obscurity in which they are left. Professor Hall refers briefly to the important group of fears affecting the genito-urinary sphere.) Each boy has 2.21 fears against 3.55 for each girl on the average; boys exceed girls only in fears of water, heights, and shyness.

Professor Hall divides the fears into 26 groups, quoting a large number of instructive cases under each group. The groups are as follows: Fear of high places, and falling; gravity fears; fear of losing orientation; fear of closeness; fear of water; fear of wind; fear of celestial objects; fear of fire; fear of darkness; dream fears; shock; thunder; fear of animals; fear of eyes; fear of teeth (odontophobia); fear of fur (doraphobia); fear of feathers; special fears of persons; fear of solitude; fear of death; fear of diseases; moral and religious fears; end of the world; ghosts; morbid; school fears; with a final group including repressions of fears. Under each of these headings Professor Hall, with his usual fertility of thought, has new suggestions to offer, which illuminate a great many of the more obscure regions of psychology and which are of value even to those who may think that they are sometimes rather risky. The author's main idea is that we cannot fully explain fears unless we postulate "purely instinctive vestiges" which must in some cases be carried very far back indeed, even as far as the vertigial remains of the body with its pre-natal fish-like stages and adult traces of gill-slits. "We must look well to it," he remarks, "that our conceptions of soul do not leave it mean, parasitic, or even epigenetic, but make it no whit less involved and venerable than the body, with rudimentary and vanishing organs like it, and like the living soma subject to incessant changes, to know the laws of which is the goal of psychology. . . . The best of all evidence of the high antiquity of the fear *anlage* of the human soul rests not on any one fear group, nor on the summated evidence of all together, but on the proportional strength of different fear elements and tendencies. Their relative intensity fits past conditions far better than it does present ones. Night is now the safest time, serpents are no longer among our most fatal foes, and most of the animal fears do not fit the present conditions of civilised life; strangers are not usually dangerous, nor are big eyes and teeth; celestial fears fit the heavens of ancient superstition and not the heavens of modern science. The weather fears and the incessant talk about weather fits a condition of life in trees, caves or tents, or at least of far greater exposure, and less protection from heat, cold, storm, etc., than present houses, carriages, and even dress afford. Yet

again, the intensity of many fears, especially in youth, is out of all proportion to the exciting cause." He refers to the statement that eider ducks in their migrations cross the Mediterranean at spots where land formerly existed, so that their topographic instincts are thus older than the present configuration of the world; "so the human instinct feelings, incalculably more ancient than the intellect, have been felt and macerated into their present general form very gradually by social, telluric and cosmic influences, some of which still persist unchanged, but more of which have been either modified or are now extinct."

At the same time, perhaps not quite logically, Professor Hall regards fears as essential even to present day human development. "While fear is the mother of all superstitions, it is also the rudimentary organ on the full development and subsequent reduction of which many of the best things in the soul are dependent. . . . To learn what to fear so as to fear wisely and effectively, although it is a school as old as the instinct of self-preservation, is still a chief part of education."

Joy and Grief.

A series of articles by Dr. G. Dumas serves well to illustrate the light which may be thrown on general psychology by careful observation of insane patients ("Recherches Expérimentales sur la Joie et la Tristesse," *Revue Philosophique*, June, July, August, 1896). Starting on the basis of the James-Lange theory of emotion, Dumas undertook at Sante-Anne a careful study of respiration and circulation in both exalted and depressed forms of insanity. He admits that respiration and circulation only constitute a portion of the factors of emotion (the general muscular system must also be considered), but with that reservation his researches were fruitful, and serve to give greater precision to Lange's more crude and general statements, differentiating two types of joy and two of grief.

Marey's pneumatograph was used for respiratory movements, Chéron's sphygmometer for the (radial) arterial tension, and Comte and Hallion's plethysmograph for the capillary circulation. Dumas found that there are two "organic groups of joyous people"—(1) with arterial hypertension, including megalomaniacal general paralytics, of whom he studied some fifteen (it is scarcely necessary to point out that the subject must not only have a delusion of grandeur, but be still able to experience joy from it), and exhibiting rapid pulse, lowered arterial tension, and peripheral vaso-dilatation; (2) with hypertension, occurring in the joy of normal persons as well as in chronic systematised delusions, mania, etc. Dumas experimented on the women at Saint-Lazare, who are at once both prisoners and patients, before and after they received permission to leave, and at the moment of receiving such permission (of course leaving them in ignorance of the nature of

the investigation) he invariably found that the cerebral excitement at once acted on the heart, producing accelerated pulse, lowered arterial tension, directly followed by increased tension and rapid respiration; but there was no peripheral vaso-dilatation (which Lange regards as primitive), though this was carefully sought for; it appeared, however, about half an hour afterwards. The mechanism of joy is somewhat more complicated, therefore, than Lange supposed. Dumas considers the order of the phenomena to be as follows:—(1) Cerebral and peripheral hyperæmia; (2) circulatory hyperactivity; (3) ideo-motor hyperactivity; (4) polypncea. "One fact is certain," he concludes, "and that is that joy always concords, like grief, with precise types of circulation. We have joy with hypotension, and joy with hypertension, rapid pulse and quickened circulation; we have grief with hypertension and grief with hypotension, and can find no examples of joy or grief outside these circulatory variations." Joy and grief are constituted in every case by the consciousness of these variations. They are often due to digestion, a toxic agent, a nervous disease, any physical cause; often, also, they are due to association of ideas and imagination. But in every case the emotion is the last term in a series that runs thus:—(1) Physical or moral cause; (2) change in circulation; (3) emotion. Thus, Dumas remarks, we may say, with Bichat, that to know if pain is true or false we must examine the pulse, and adds that the same is true also of joy.

The really definite contribution which Dumas has brought to the subject is the evidence he seems to supply that the circulatory change really does precede the emotion, as a matter of observation. His chief case was one of circular insanity, a case to which he attributes so much importance that he is preparing a special monograph on it with Prof. Joffroy. This was the case of a woman who alternated between extremes of intense joy and activity, and of utter lassitude and depression. He repeatedly found that, chiefly by the examination of the pulse, he was able to foretell the coming change in the patient's state some hours before any mental indication had shown itself.

Individual Sensibility to Pain.

This subject has lately been investigated in the Psychological Laboratory of Columbia University by Dr. Harold Griffing ("On Individual Sensibility to Pain," *Psych. Review*, July, 1896). The relative sensibility of individuals to pain is, he remarks, not merely of theoretical interest, but of importance both in medicine and education, and his experiments were made not so much for statistical purposes as to throw light on those sources of error which are usually ignored in such investigations. The tests were made on 53 students with Cattell's pressure algometer, and with the induction coil. Pressure was applied to palm of hand and to fore-

head, and slowly increased until discomfort was caused. In the electrical tests the two forefingers of each hand were placed in separate cups of water, and the alternating current sent through the body from hand to hand. Before making each test a judgment as to the probable result from appearance of hand was recorded. The results show that (as might be expected) thickness of skin and subcutaneous tissues is an important element in determining the threshold for dermal pain. It is not, however, the only element involved. Some observers were much more, and others less, sensitive than the appearance of the hand indicated. The relative sensibility of different parts of body also varied; a sensitive hand was not always accompanied by a sensitive forehead, though it was so on the average. It is generally assumed that sensibility to one form of painful stimulation serves as an index to pain sensibility in general. This was found to be incorrect. By testing 27 persons with the induction coil, as well as the pressure algometer, it was found that sensibility to electrical stimulation may be quite independent of pressure sensibility. Three observers, all very sensitive to pressure, felt no discomfort even when the maximum strength of current was given. Dr. Griffing concludes:—"The probable fact that in the pressure experiments the variations cannot all be explained by the thickness of the skin and similar conditions, goes to show that there is such a thing as general sensibility to pain; and the general correspondence of the results for different places of stimulation may be interpreted in the same way. But even then results may be due to peripheral causes, and not to any property of the central nervous system, or of the consciousness by which it is accompanied."

Peculiar and Exceptional Children.

The study of peculiar and exceptional children lies on the borderland between the physiological and the pathological, which is the reason why it so long remained an outcast study, in spite of its manifest importance. An interesting contribution to it has lately been made in America by Mr. E. W. Bohannon, under the inspiration of Prof. Stanley Hall ("The Study of Peculiar and Exceptional Children," *Pedagogical Seminary*, October, 1896). His lengthy paper is really a digested report of 1,045 cases (613 girls and 432 boys) sent in by experienced teachers. They are classified into 43 type-groups in accordance with the predominant abnormality, the heavy, the tall, the small, the strong, the bodily weak, the deft, the agile, the ugly, the deformed, the birth-marked, the dirty, the clean, the cruel, the silent, the loquacious, the teasing, etc. These groups are divided into three classes, according as they represent good, indifferent, or bad qualities.

There seems reason to believe that both in general health and in mental ability the larger children are superior to the others; there is, however, pathological cases among them, though more among

the stout than the tall. Among small children the healthier ones show great activity both of mind and body, but there is a very marked increase in the number of cases showing degeneration; they are often delicate, or could not speak, or ugly, deformed, vicious, dull, mean, spiteful. The small are thus, as a class, much more strongly pathological than the large, and it is added that the treatment they receive is likely to intensify morbid tendencies. The deft and the agile are both undersized, and the agile have the better health, from deftness being often an acquisition due to defects of health, etc. Ugliness is commonly associated with various bodily and mental defects; "there are records of divorces and disreputable parents, of obstinacy, stubbornness, backwardness, gloominess, mental defect, nervousness, etc. That these mental abnormalities might be largely the result of unkind and inconsiderate treatment, and that they might be lessened by right treatment, is probably true, but that there is a predisposing physical basis for them must be admitted. Mere ugliness of face does not imply degeneration, but it is more often found among those who are degenerating." Bohannon finds (as Warner and others have found) that boys are much more liable to deformity than girls. Daintiness (extreme dislike of dirt, etc.) he considers often has a pathological basis. Only children are a special and important group which the author proposes to deal with more fully. He finds that two-thirds of the children with disadvantageous traits belong to this group. The first born and the last born are also specially liable to be abnormal.

Although the report suffers from the absence of personal investigation of the cases, it contains a great many observations which are extremely interesting and suggestive, both from the scientific and the practical points of view.

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

GENERAL MEETING.

A General Meeting was held at the Borough Asylum, Mapperley Hill, Nottingham, on Thursday, February 18th, under the Presidency of Dr. Julius Mickle.

The members present were—Drs. Wigglesworth, Carlyle Johnstone, Mercier, Cassidy, Rayner, Tate, Bower, T. W. McDowall, Legge, Caldecott, Powell, Vincent, Montgomery, E. W. White, Macphail, Spence, Benham, Thomson, Ewan, Clapham, Alexander, Seymour Tuke, Cox, Beach, Stewart, Finch, Aplin, Kay, the Secretary (R. Percy Smith) and the Treasurer (H. Hayes Newington).

The following Candidates were elected as Ordinary Members:—Sydney Hamilton Rowan Montgomery, M.B., B.Ch., B.A.O., Royal Univ., Ireland, Assistant Medical Officer, Borough Asylum, Nottingham. Proposed by Evan Powell, William Vincent, and R. Percy Smith. Harold Andrew Kidd, M.R.C.S. Eng., L.R.C.P. Lond., Medical Superintendent, West Sussex Asylum, Chichester.

Proposed by James Moody, A. N. Boycott, and W. Ireland Donaldson. William Harris, M.D. St. And., F.R.C.S.Ed., M.R.C.P.Ed., Medical Superintendent, City Asylum, Helleston, Norwich. Proposed by Henry Rayner, H. J. Macevoy, and E. Percy Smith. William Henry Kesteven, M.R.C.S.Eng., L.S.A.Lond., Hillwood, Waverley Grove, Hendon. Proposed by G. Fielding Blandford, Henry Hicks, and Frank Schofield.

The PRESIDENT stated that it had been resolved by the Council to present an illuminated address to their late Honorary General Secretary, Dr. Beach, who for seven years had most faithfully served the Association, and whose energy and industry in promoting the success of the Association had conduced to the welfare of the organisation as a whole, and the meetings of the members in particular.

A discussion was opened by Dr. Rayner upon "The Housing of the Insane, and the Size of Asylums."

Cases of interest in the wards of the Nottingham Borough Asylum were shown by Drs. Vincent and Montgomery.

These papers, with relative discussions, will be printed in the next number of the Journal.

The Members of the Association present lunched at the Asylum, by kind invitation of Dr. Powell.

The members dined together after the meeting at the George Hotel, Nottingham.

MEDICO-LEGAL CASES.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

Reg. v. Leggatt.

Prisoner, a seaman, was indicted for the murder of his wife. They had been married for three years, and had been on bad terms, the prisoner often beating the deceased, of whom he was jealous. Whether there was good foundation for his jealousy was not proved, but prisoner had asserted that on one occasion he found a man's stud in his wife's bed. He returned on September 2nd from a seven months' voyage, and on December 7th he shot his wife with a revolver, threw himself into the river, and subsequently went to the Police Station and gave himself up for the murder. He there gave a perfectly rational and connected account of the murder, and the police surgeon who examined him at the time could find no appearance of insanity about him. It was proved that during his last voyage he had fancied that the other sailors were whispering about him and were talking about his wife. The prisoner's brother deposed that since the prisoner had been home from his last voyage he had not appeared quite right in his mind.

Dr. Rorie, Medical Superintendent of Westgreen Asylum, who had examined the prisoner at the instance of the Crown, was called for the defence. He had examined the prisoner four times. On the first occasion he found the prisoner practically sane. From the account given him by the prisoner he concluded that the prisoner was subject to delusions with regard to the sailors whispering about him, but that the crime was committed under stress of provocation (the wife having struck him) and in a moment of fury, and was not the consequence of the delusion, but was due to the morbidly irritable condition in which the prisoner was at the time.

Dr. Raw, Superintendent of the Dundee Infirmary, gave general evidence that the facts as proved in Court were compatible with the suggestion that the act was the result of homicidal impulse prompted by delusion.

The judge summed up that the jury need not dispute that the prisoner was probably under a delusion in regard to his wife. There was no reason to suppose that she had been unfaithful. He might have been under a delusion on that point, but that would not help him unless it was an insane delusion—that the delusion did not arise from his own jealous, suspicious temperament, but from an actually diseased mind. If the prisoner was a man whose brain was diseased, and if the outcome of that disease was an insane delusion that had no foundation whatever, they must acquit him on the ground of insanity; but if he was a man of suspicious disposition, who allowed a few not very important incidents to prey upon his mind, and these had overcome his self-control so that in a fit of passion he had used his revolver with fatal effect, then they must bring in a verdict against him.

The jury found the prisoner guilty of culpable homicide.—Dundee Circuit Court, January 15th, 1897 (Lord Low).—*Dundee Advertiser*, January 16th.

The evidence of insanity was very slender, and the prisoner's own chief witness did not consider that the crime was due to his delusion. The summing up was very fair, and the verdict appears to meet the merits of the case.

Reg. v. Allcock.

Prisoner, a collier, aged 26, was indicted for the murder of his wife on September 17th. During virtually the whole of their married life prisoner had been jealous of his wife, and had suspected her and accused her of unfaithfulness. It did not appear that there were any grounds for his suspicions. On the evening of the murder the prisoner and his wife were together in the house of a neighbour, and the prisoner sat in a crouching position on his haunches, and appeared dazed. He was found to be crying, "sobbing bitterly," and water was offered to him "because they thought he was fainting." He followed his wife home, and shortly afterwards cut her throat. After the crime he walked to the police station, two miles distant, and said "I have come to give myself up. I have murdered my wife. I have cut her throat with a razor. She has wronged me. She has been going with another young man. I have stood it till I can't stand it any longer. I wanted her to go to bed and she would not." On being cautioned, he said "It's no use, you will have to do your duty. I loved her and she has wronged me." He was very calm.

Dr. Evan Powell, of Nottingham Borough Asylum, had examined the prisoner on the 16th November, at the request of the Treasury. Prisoner appeared dazed and absent-minded. His demeanour was extremely morose and sullen, and it was very difficult to engage him in conversation. He appeared to lapse into a condition of absent-mindedness and reverie. Witness had to put the same question to him several times before he could get an answer. He considered the prisoner to be an insane person. Witness had very grave doubts whether the prisoner knew that he was doing something wrong, something criminal, when he killed his wife.

Dr. O'Neil, medical officer to the prison, said that prisoner had been very quiet and sullen, speaking very little, but otherwise had not done anything to indicate insanity.

The judge said that the only question was whether it was established on behalf of the prisoner that at the time he committed the act he was insane and did not know the nature and the quality of the act. If they found that he knew he was killing his wife, and knew also that it was wrong, then they would say he was a sane man, and liable to be punished for his crime. A great deal had been said about medical evidence. He was sorry to say that he did not attach that peculiar value to purely medical evidence which perhaps some people did. He always thought that madness was a thing easily detected by those who had opportunities of associating with the person affected, and he always thought, too, that the best evidence of madness was the testimony of those among whom the person had lived—those persons who had the best opportunities for observation . . . and he should take the statement of a warder, say, who had had him in charge, as being

quite as valuable as a gaol surgeon. He could not imagine anyone associating with a lunatic without observing it. . . . There was not the slightest suggestion made by any witness of the prisoner being suspected of insanity before September 17th. . . . The medical evidence must be looked on with great suspicion. It was very probable that any person under such circumstances being medically examined by a stranger would have a shrewd suspicion of what the doctor was there for.

The jury found the prisoner guilty.—Nottingham Assizes, December 4th, 1896 (Mr Justice Day).—*Nottingham Daily Express*, December 5th.

The evidence of insanity, as adduced by counsel, was three-fold. 1. The conduct of the prisoner in crouching on the ground and crying on the evening of the murder. 2. His extreme and groundless jealousy and suspicions with regard to his wife's unfaithfulness. 3. The evidence of Dr. Powell. On none of these grounds was the evidence very cogent. The first is scarcely inconsistent with sanity. The second, while it is no doubt present in many cases of insanity, is present also in many cases in which insanity is not suspected; and the evidence of Dr. Powell was not very strong. It is true that he considered the prisoner an insane person, but when the grounds of his belief were examined they amounted to no more than a certain absent-mindedness in the prisoner. There may have been other circumstances which influenced Dr. Powell in coming to a conclusion, but they do not appear to have been stated in Court. The prisoner's mother had been insane, and the continuous, extreme, and, as it appears, groundless jealousy by which he was possessed, and which undoubtedly actuated the crime, is evidence that his mind was not altogether a normal and well-balanced mind. But if the possession of a mind that is not altogether normal and well balanced is to render a criminal immune, how many criminals will be punished? It is difficult to see how, upon the evidence before them, the jury could have arrived at any other result.

It will be observed that the judge laid down the meaning of the law in its narrowest sense, although in other cases the same judge has interpreted the same law in a widely latitudinarian manner; and it is manifest from a pretty extensive observation of criminal trials, in which insanity has been pleaded, that the terms in which the judge expresses the law depend upon the view that he takes of the criminality of the prisoner. If it appears to him, after reading the depositions and hearing the evidence in Court, that the prisoner is unsound in mind, he states the law in such a way as to make it easy for the jury to find the prisoner insane. But if, as in this case, he takes a strong view that the prisoner ought to be punished, he charges the jury in the strict terms of the law. If this variation in practice is undesirable, it is difficult to see what legislation would be effectual in eliminating the personal equation from the judicial bench.

The remarks of the judge upon the value of medical evidence in cases of insanity are to be regretted; for it is to all good citizens a matter for regret when the administrator of justice, who should represent the majesty of the law in his dicta as well as in his demeanour, goes out of his way to make himself ridiculous even to a section of her Majesty's subjects. And when Mr. Justice Day declares that he cannot imagine anyone associating with a lunatic without observing it, by which he no doubt means observing the insanity, he exhibits such a profound ignorance of insanity as entirely abolishes the authority, and indeed the interest of anything that he may say upon the subject. It is therefore not worth while to deal with the rest of his regrettable remarks on medical evidence.

Reg. v. Collins.

Louis Collins was found guilty of libelling Mr. G. Boulton. Mr. Commissioner Kerr, who tried the case, expressed grave doubts as to the prisoner's mental condition, and postponed sentence that prisoner might be medically examined. Prisoner was certified as insane, and application was made to the Home Secretary for his removal to an asylum. No sentence was pronounced.

An example of the complete arrest of criminal proceedings, at whatever stage, by the insanity of the prisoner. In this case, the prisoner being found insane after conviction and before sentence, the sentence was arrested.

Browning v Mostyn. By Mr. WOOD RENTON.

The case of *Browning v. Mostyn*, tried before Mr. Justice Gorell Barnes and a special jury in the Probate Division in January, was interesting from the medico-legal point of view. It shows how deeply rooted the principle laid down in *Banks v. Goodfellow*—that given a knowledge of the value of the act and absence of undue influence at the critical period, testamentary capacity exists—has become in English law. Whether this principle has an equally firm hold of the Scotch judicial mind is a question which must be postponed till the judges who decided *Ballantine v. Evans* (1886, 13 Ct., 1 Sea., 4th Serr., 666) have an opportunity to reconsider their language in that case in the light of *Roe v. Nix* (1893, Prob. 55) and *Browning v. Mostyn*. The Monte Carlo will suit also offers another illustration of the class of case in which costs may be allowed out of the estate on the principle that the conduct of the testator himself was the cause of litigation. This exception to the general rule that costs follow the event was first recognised where a testator had left his papers in confusion. It was then, properly, extended to cases of alleged mental incompetence and undue influence. There was certainly never a case in which its application was more thoroughly justified than in that of Mr. Conyngham.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF COMMONS.

Lunacy Statistics.

Mr. Patrick O'Brien, on behalf of Mr. Corbet, asked the Home Secretary if attention had been recently called to the fact that the number of insane persons under official cognisance in the United Kingdom, Ireland included, have increased from 55,525 in 1862 to 128,896 in 1895, and that the ratio of insane per 1,000 of the population had gone up during the same period from 1·81 to 3·28; and whether, in view of the importance of the subject, he would take steps to convene an International Conference to ascertain what measures could be taken to arrest the spread of the disease?—Sir Matthew White Ridley said, in reply: I am aware of the great increase in the number of insane persons in institutions, and I would remind the hon. Member that on February 28th of last year I stated in this House that I should consult with the Lord Chancellor with a view to the attention of the Lunacy Commissioners being specially directed to the question. The Lunacy Commissioners have, I am informed, completed a special report on the subject, which is now in the printer's hands; and until I have had the opportunity of considering that report I should prefer not to reply to the second part of the hon. Member's question.

Medical Superintendents of Lunatic Asylums.

Mr. Dane—I beg to ask the Chief Secretary for Ireland whether the rule of the Civil Service requiring officials to retire at the age of 65 applies to resident medical superintendents of district lunatic asylums and their assistants?—Mr. G. Balfour: No, sir. The rule in question applies only to permanent Civil servants of the Crown, and the officers of lunatic asylums are not Civil servants.

Maintenance of Pauper Lunatics.

Sir M. Stewart—I beg to ask the Lord Advocate if his attention has been called to the hardship imposed by law on a parish which has been compelled to afford relief to an alien pauper lunatic becoming chargeable on the rates of such parish; and if he can see his way to free the rates from such a burden by extending the costs of chargeability over a wider area than one parish by legislation or otherwise.—The Lord Advocate: So long as the parish system is retained cases of hardship of the kind mentioned must occasionally occur, but will tend to distribute themselves equally. I may point out, however, that, so far as the obligation to relieve is concerned, there is no difference between an alien lunatic and a native lunatic without a known settlement. The occasional nature of the case complained of is a sufficient argument against making alterations in a system which works well.

Notes on the quantity of Water required in Asylums for the Insane, with special reference to the Roxburgh District Asylum and its Water Act (1896). By J. CARLYLE JOHNSTONE, M.D., Melrose.

1. The requirements of the Scottish General Board of Lunacy are a minimum of 40 gallons of water per head of the asylum population daily, and in the case of new asylums 50 gallons, to allow for increase of population. [This estimate does not appear to have been founded on any recent inquiries made by the Board.]

2. The English Commissioners in Lunacy, in the "Practical Suggestions" (1892) issued by them, state that "if undue waste could be prevented, from 30 to 35 gallons per head per diem ought to be an ample allowance; but the difficulty in preventing a large amount of waste is so great that generally from 40 to 50 gallons are required. Even this amount may be exceeded unless proper precautions are taken . . . and by constant supervision. A minimum supply of at least 40 gallons per head per diem should therefore always be secured, and no site should be selected in which this quantity cannot be obtained in the driest season." [We may take it that a small asylum will require a somewhat larger quantity per head than a larger asylum.]

3. Parkes ("Practical Hygiene," 1883) estimates the quantity required for sick men at 33 to 46 gallons daily, and says that from 40 to 50 gallons are often used. [It will probably be admitted by everyone that the inmates of hospitals for the insane require more water than sick soldiers in hospital.]

4. In the year 1893 I made inquiry as to the quantity of water used at the (eight larger) District Asylums and the (seven) Royal Asylums of Scotland. From seven of the asylums I could not get any precise data. The following figures were furnished by the remainder:—

Argyle and Bute Asylum ..	70 gallons per head daily, but a reduced quantity in summer.
Inverness	About 62 gallons per head per diem.
Bothwell	About 42 "
Sterling	From 45 to 50 gallons " per head per diem. By meter.
Aberdeen	About 46 gallons per patient per diem. By meter.
Dumfries	About 83 gallons per patient per diem.
Edinburgh	About 45 gallons per head of entire population. By meter.
Montrose	Over 40 gallons per head of entire population. By meter.

5. Dr. Sibbald, H.M. Commissioner in Lunacy for Scotland, states in his evidence before the Select Committee on the Roxburgh District Lunacy Board's Water Bill (1896), that the following quantities were used and paid for by meter:—

Edinburgh Royal Asylum...	54 gallons per head daily.	By meter.
Glasgow Royal Asylum ...	46 " "	"
Montrose Royal Asylum ...	52 " "	"

and that the quantity used at the Crichton Royal Institution was upwards of 80 gallons per head. Asked: "Do you think that 60 gallons per head is an inordinate quantity?" Answer: "I think it is a desirable quantity."

6. At the Roxburgh District Asylum in the years 1893-94-95-96 careful measurements were made at regular and short intervals of the supply yielded by the sources used by the Board, and of the quantity of water actually consumed in the asylum. The amount consumed depended, of course, very much upon the amount procurable; but, taking ordinary dry seasons when every care was being taken to prevent waste, it was found that the quantity per head of the entire asylum population (300) ranged from 43 to 47 gallons, the average being 44 gallons. This quantity did not include roof and surface water, which is used to a considerable extent (but cannot easily be measured) in the laundry and steam boilers. *Even with this quantity of water, the supply has never been sufficient to permit of a regular bathing of the patients once a week, the general bathing taking place only once a fortnight.* It is evident therefore that, unless there has been undue waste of water, a greater quantity than 44 gallons per head per diem is required in the Roxburgh District Asylum.

7. In the year 1896 the Roxburgh District Board, having resolved to apply to Parliament for power to obtain an increased supply of water (the Board at that time being in actual possession of only one source yielding a minimum flow of 1,600 gallons of water daily, or 5·3 gallons per head), consulted Mr. W. R. Copland, C.E. (one of the most eminent engineers in Scotland), as to the quantity of water required for an asylum population. Mr. Copland advised the Board that a minimum of 60 gallons per head daily was necessary. Owing to the promoters of the Bill having come to an arrangement with the opposition before all the evidence was led, Mr. Copland's evidence was not taken; but he was prepared to repeat his opinion before the Committee, and to back it with figures and statements of the quantity consumed in other asylums (instancing, I believe, some of the newer Glasgow District Asylums). Mr. Copland's evidence was to have been supported by Messrs. Buchanan and Bennett, C.E.

8. Although it was suggested by the Counsel for the opposition that 60 gallons per head was "a large order," as far as I could gather, it was not intended by the opposition to raise any strenuous objection to the quantity of water desired by the Asylum Board. As it happened the exact quantity of water required had not much to do with the merits of the case. In an informal conversation between the two parties (which was not binding on any one, and is stated here without authority) Mr. James Wilson, C.E., Engineer to the Edinburgh Water Trust, and one of the most eminent water engineers in the kingdom, admitted that 60 gallons per head was not at all an extravagant estimate for an asylum population.

9. No fair comparison can be made between the average quantity of water used per head in an asylum and the average quantity used in the general community. It is well known that the general community is made up of large consumers and small consumers of water. A proportion of the smaller consumers use very little water indeed, and a proportion of the larger consumers use an excessive quantity. It is notorious that an asylum population consists almost entirely of large consumers. (I need not do more than refer to the conditions which occasion this high rate of consumption, the habits of the patients, their mental and physical requirements of treatment, the greater "unavoidable waste," etc.). If any comparison is to be made it must be made between (the

large consumers making up) the asylum community and the large consumers in the general community. I am advised by experienced engineers that among the latter (*e.g.*, the villa residents) 60 gallons per head per diem would be rather an under than an over-estimate.

10. In my opinion 40 gallons of water daily per head of the entire asylum community is decidedly too low an allowance for an asylum community of 300 persons. I doubt very much whether 50 gallons is enough. My experience leads me to recommend that for such a community 60 gallons should be regarded as the minimum quantity when a site for an asylum is being chosen, or when a Board is about to expend money upon, or to become a party to, any arrangement for the satisfactory supply of water to its asylum.

11. For a larger asylum probably a somewhat lower allowance per head would be sufficient; but it would appear from the figures given above that in any case the allowance must be a higher one than that proposed by the Lunacy Commissioners.

12. It should be clearly understood what is intended by the word "minimum." If the water supply is only occasionally restricted to an insufficient "minimum," no great hardship is caused; but no consumer expects to be limited to the "minimum" supply at all times. If the *minimum* supply is that which is procurable during three or four months of dry season yearly, then, to be satisfactory, it must be equivalent to a supply which is *sufficient* for all necessary and proper purposes.

LUNACY IN LONDON.

The London County Council has to encounter great difficulties in dealing with the yearly increasing numbers of insane patients. The Asylum Committee require to exercise skill, tact, discretion in no ordinary degree. Already the accommodation of the various asylums is overstrained, and that in spite of temporary measures. A "normal" rate of increase of 600 patients per annum is an appalling fact; but it must be faced. The whole question was considered at the Nottingham meeting of the Medico-Psychological Association, and we shall return to a consideration of the question on the publication of Dr. Rayner's paper on the "Housing of the Insane."

LUNACY IN EDINBURGH.

Edinburgh has been called upon to consider the impossibility of continuing the present arrangements in respect of the insufficiency of the accommodation for the pauper insane. A new asylum is to be built, and an order has been issued by the General Board of Lunacy, with the approval of the Secretary for Scotland, dividing the former Edinburgh City Lunacy District into two new districts. The pauper division of the Royal Edinburgh Asylum will thus be relieved of the pressure on its space by the removal of all patients chargeable to the parishes of Edinburgh, and will in future only receive cases from the parishes of Leith and Duddingston.

DUNDEE AND DUMFRIES ROYAL ASYLUM.

Some dissatisfaction has been expressed of late, in reference to the constitution of the Directorate of these Institutions. At Dundee, the proposal has been made that the Parish Council should acquire the asylum; while at Dumfries a Bill is being promoted in Parliament for the reconstruction of the Board of Management.

The Dundee Parish Council urge that they could perform all the duties and care for the patients at a less cost than the present Directors. Dr. Sibbald, as Commissioner in Lunacy, some years ago, prepared a memorandum on the subject, which enters into the question as to the representation of Parish Councils upon the governing bodies of the Royal Asylums, and we produce, what purports to be an abstract of it, as given in the *Dundee Advertiser* of 4th March, 1897. He begins by giving a summary of the complaints made by the memorialists, which are to the effect that (1) the rates charged in the Royal Asylums for pauper lunatics are very much in excess of those charged in District Asylums; (2) in certain lunacy districts the Parochial Boards are precluded by Section 59 of the Lunacy Act of 1857, from building new asylums or sending their patients to any asylum except the Royal Asylums, and they are forced to submit to the charges made by the Royal Asylums; (3) upwards of one-half of the money expended on most of the Royal Asylums is collected from the ratepayers by Parochial Boards, and paid for the maintenance of pauper lunatics; (4) though the ratepayers look to the Parochial Boards as responsible for the expenditure of what they contribute to Royal Asylums, Parochial Boards are not represented on the management of Royal Asylums; (5) the governing bodies of Royal Asylums, not being publicly elected, do not take a due amount of interest in seeing to the economical administration of these funds. In reply to the statements of the memorialists, Dr. Sibbald states that it is in general true that the rates charged in Royal Asylums for pauper lunatics are in excess of the rates charged in District Asylums, in so far as regards what is paid for pauper lunatics out of the poor rate. But in order to judge whether that fact affords a fair basis of complaint it is necessary to understand what the rates charged in the two classes of asylums represent. In the case of district asylums the providing and maintaining of buildings, etc., does not fall on the poor rate, but is separately paid for out of the county and burgh assessments. The figures quoted by the memorialists as applicable to district asylums have reference merely to what is expended on the maintenance of patients as distinguished from outlay on land and buildings. In the case of Royal Asylums the rates charged to parishes are intended to cover both kinds of expenditure. In the case of District Asylums the burden of providing the land and buildings falls also on the public, though not paid out of the poor rate. The position of the matter may be conveniently illustrated by comparing what has taken place in the county of Perth with what has taken place in the neighbouring county of Forfar. There exists in the county of Perth, which constitutes the Perth Lunacy District, Murray's Royal Asylum, the Directors of which declined to avail themselves of their statutory power to compel the District Board to contract with them for the maintenance of their pauper lunatics, and resolved not to receive them. In consequence of this, the District Board were compelled to levy an assessment on the county for the erection of an asylum. The asylum was opened in 1864, and the cost of the land, the original buildings, the repairs, and other landlord expenses have been a burden, not on the payers of poor rates, but on the payers of county assessments ever since. The average assessment for these purposes for the 10 years ended 1888 was £3,190, and the average number of inmates in the asylum 270. There had been an annual burden on the payers of county and burgh assessments during these years on account of every pauper lunatic in the District Asylum of £11 16s. 3d. over and above the sums paid by the Parochial Boards out of the poor rates for the maintenance of lunatics. Although in time the original cost would be gradually paid off, it was found in the case of all asylums that from time to time alterations and additions had to be made which involved further borrowing, while the expense of repairs on the original building tended to increase from year to year. A fair estimate of what the permanent annual burden will probably be may be arrived at by taking six per cent. on the capital outlay for land and buildings to cover interest on capital and yearly charges for repairs, taxes, insurance, etc. The capital outlay in the case of Perth District Asylum was £40,000, which at six per cent. gives £2,400 per annum. This divided by 270 gives £8 18s. for each lunatic. The present annual payment for the maintenance of each lunatic made by Parochial Boards in the

Perth district is £26, and this added to the contribution from the county makes the total annual cost of each lunatic £34 18s. If the position of Forfarshire, which constitutes the Forfar Lunacy District, be examined, it is found that the Royal Asylums of Dundee and Montrose have contracted to receive and maintain all pauper lunatics of the district, and that the rate charged at present is £28 12s. There has been no expenditure for the erection of a District Asylum, and that sum of £28 12s. per annum is the whole burden upon public funds for each pauper lunatic. Taking the whole of Scotland, it was found that there was an annual advantage of £3 11s. 9d. on account of each pauper lunatic belonging to the districts which were obliged to send them to Royal Asylums over those sent to District Asylums. It should be fully recognised that if the memorialists succeed in carrying out their views the result will be that the parochial rates would be saved an expenditure of £5 on each lunatic by laying on the county an assessment of £9 12s. 5d. for each lunatic. As to the second ground of complaint, Dr. Sibbald says that it is not the Parochial Boards, but the District Lunacy Boards, that are prevented from building new asylums or sending their patients to other asylums. Parochial Boards are equally obliged to send their pauper lunatics to the District Asylums of their Lunacy Districts with which the District Boards have entered into contracts. In the case of Royal Asylums, the rates are determined by negotiation between the asylums and the District Boards, and if the rate is regarded as excessive an appeal can be made to the General Board, which has power to settle the difference. In the case of District Asylums, the District Boards fix such a rate as will meet expenses. As to the third ground of complaint, Dr. Sibbald replies that in the seven Royal Asylums for 1889 the sum paid for pauper lunatics was considerably below the sum paid for private patients. As to the want of control on the part of Parochial Boards of the money expended on pauper lunatics, the memorandum states that that money, so far as the Parochial Board is concerned, is in the same position as the money collected for the school rate. Parochial Boards have no responsibility for the administration of the school rate, and they are just as free of responsibility in the management of asylums. An insuperable objection to giving representation of Parochial Boards on the governing bodies of asylums lies in the fact that such a representation would naturally lead to special advantages being given to Parochial Boards at the expense of private patients or to the detriment of other parts of the asylums. The manner in which the lunatics were provided for by Parochial Boards prior to 1857 required to be examined in order to obtain an idea of the evils which arose when two kinds of administration so different in their nature as the dealing with ordinary pauperism and the providing for the insane were associated under one authority. The state of matters then disclosed was universally admitted to be a disgrace to the country.

CUMBERLAND COUNTY ASYLUM.

An important addition to this Asylum was opened on the 24th February. By the Lunacy Act of 1890, powers were given to the Committee of Visitors to build for the reception of private patients, so as, in some measure, to counteract the evil done by limiting the licenses for private asylums. The Committee of Garlands Asylum have taken advantage of this enactment, and have erected a separate house about a quarter of a mile from the entrance door of the public asylum. It has the appearance of an elegant, commodious, and comfortable villa. The public rooms occupy the ground floor, and there are two four-bedded dormitories and four separate bedrooms on the first floor. The intention is to receive a limited number of male patients of quiet and orderly class in this house, and to add another similar building for female patients in due course. Dr. Campbell is to be congratulated upon having kept the Cumberland County Asylum well to the front in this matter. The wants of the insane

private poor have never yet been adequately met by the country ; and our only word of caution is that there should be, in our opinion, a limit to the rates of board charged in such institutions. They should be rigidly kept for the class indicated, and we venture to submit that the maximum payment should be a guinea a week.

THE NEW DERRY ASYLUM.

The *Lancet*, of 28th November, 1896, reports that it has been agreed to select a number of architects, and to ask them to send in plans for an asylum to contain 600 patients. It is calculated that this can be done for £170 per patient. Protests have been made in reference to this scheme on the ground that the expenditure will bear heavily upon the county, that the half empty workhouses should be utilised, that the people are not duly represented on the management. If the asylum be required for the treatment of curable cases we cannot conceive that any suggestion to utilise workhouses can be upheld.

BERI-BERI IN RICHMOND ASYLUM, DUBLIN.

We are glad to learn that the epidemic of beri-beri is now disappearing from the Richmond Asylum. There has been no fresh case on the male side since November, and but few amongst the female patients. It would appear that progress is being made with the works for the relief of over-crowding, and improvement of the sanitation.

ACCIDENTS.

Two fatal accidents have been reported, one in the Portsmouth Asylum and one in the Richmond Asylum. At the former one patient in a sudden fit of anger seized another and hurled him against a table; at the latter one patient fractured the skull of another with a grating. Both these incidents seem to have occurred at the hands of working patients, and illustrate the constant dangers to be encountered in dealing with the insane.

LATTER-DAY METHODS.

The Portsmouth Asylum is surely ruled by Gilbertian authorities. Some time ago Dr. Mumby was appointed Medical Superintendent on the plea that he had proved a most admirable and efficient medical officer of health. He, however, laboured under the disadvantage of having had no previous experience in lunacy. Later, we observed that the Chairman of the Committee advertised for an Assistant Medical Officer—one with “some previous experience in an asylum preferred.” “Preferred” is good, but “necessary” would have been better from our standpoint, the best for the patients. *Fiat experimentum*. The world thinks, and we think, too, that as a general rule this topsy-turvy method of inexperienced Superintendent and experienced assistant is not to be desired.

Portsmouth, nevertheless, has so much of business aptitude as enables the Asylum Committee to fix the salaries for the medical officers they employ.

Not so Middlesborough, which demands "What price Superintendents?" Has it then been impossible for the Middlesborough New Asylum Committee to ascertain the average payment in similar institutions? Or, do they hope to go one better than their neighbours in the pursuit of cheese-paring? Middlesborough has settled the vexed question. There is no such entity as the courage of one's opinions.

AFTER-CARE ASSOCIATION.

The Council of the After-Care Association for poor persons discharged recovered from asylums for the insane appeal for funds to carry on their beneficent work. The Secretary, who will acknowledge subscriptions or donations made to him, is Mr. H. Thornhill Roxley, Church House, Dean's Yard, Westminster. We think it right to draw attention to this appeal, in the hope that our readers will aid as may be possible; for the action of the Association is not limited to any district and many deserving cases are in urgent need of assistance.

EPIDEMIC INSANITY.

A series of cases is reported from Skibbereen, Ireland. Two brothers and then three sisters became violently insane, and some of them were eventually sent to the Cork District Asylum. Such cases of *folie à deux* or communicated insanity are of special interest, and we hope to obtain a note upon these patients from Dr. Oscar Woods for the next issue of this Journal.

TABLE SHOWING PENSIONS GRANTED SINCE APRIL, 1892.

(In Continuation of Dr. Murray Lindsay's List, *Journal of Mental Science* Vol. 38, p 252.)

No.	Asylum.	Name.	Age on Retirement.		Length of Service.	Total Value of Office.		Pension Granted.	Proportion of Pension to Value of Office.	By whom and when Granted.
						£	£			
39.	Leicester ...	Dr. Higgins	53	18	800	300		About one-half		Co. Council, 1895
40.	Chester ...	Dr. Davidson	68	28	1000	700		Two-thirds		" " "
41.	Portsmouth ...	Dr. Bland	48	17½	800	400		One-half		Bo. " 1896
42.	Hereford ...	Dr. Chapman	54	26	900	500		Over one-half		C. " "
43.	Suffolk ...	Dr. Eager	51	20¾	1000	350		One-third		" " 1897
44.	Derby ...	Dr. Lindsay	63	25	1122	600		Over one-half		" " "

CORRESPONDENCE.

FROM DR. RUTLEDGE.

At the meeting of the Medico-Psychological Association (Irish Division), held at Londonderry in August, 1896, I read a paper on "Photography as an aid in the diagnosis of insanity," and showed a series of photographs. In connection with this subject I might make the following suggestion for insertion in the next issue of the *Journal of Mental Science*, viz., the advisability of devoting one page of the Journal each quarter for the reproduction of photographs, either the face and bust, full length portrait or brain to appear alternately. Two or four photos on the one page, according to the size, a standard for which might be agreed upon.

If possible, I would like this course to be made a matter of special resolution at the next annual meeting, as I believe, were it adopted, it would add greatly to the value of the Journal.

FROM DR. HAMILTON C. MARR.

In view of the new regulations obtaining in medicine, the Barony Parish Council, in appointing two clinical clerks, at Woodilee Asylum, Lenzie, have decided to make the appointments open, not only to graduates in medicine, but also to fourth and fifth year students, provided always that such students have taken out classes in practical pathology. The Clinical Clerks will be boarded in the asylum and will be provided with railway season tickets between Glasgow and Lenzie to allow of their attendance if they desire it on special classes in Glasgow. The appointments are to be for six months, three months on the male and female sides alternately. In special cases a three months' appointment may be made.

HACK TUKE MEMORIAL FUND.

The following subscriptions for this fund, collected in America, have been received from Dr. Pilgrim, of Plough Keepaie, New York:—C. W. Pilgrim, 10 dollars; J. E. Courtney, 5 dollars; T. E. Bernford, 5 dollars; O. H. Langdon, 5 dollars; I. G. Harris, 5 dollars; Henry M. Hurd, 5 dollars; Emma Putnam, 5 dollars; Richard Dewey, 10 dollars; J. N. Teeter, 3 dollars; Geo. H. Turney, 2 dollars 50; E. C. Gibney, 2 dollars; C. W. Page, 10 dollars; E. H. Howard, 5 dollars; T. J. W. Burgess (Canada), 5 dollars; Geo. H. Rohé, 2 dollars; P. M. Wise, 5 dollars; R. S. Hutchings, 1 dollar; Frank G. Hyde, 1 dollar; Walter M. Brinker, 1 dollar; Sidney D. Wilgus, 1 dollar; W. L. Babcock, 1 dollar; W. G. Cooper, 1 dollar; W. H. Kidder, 1 dollar; C. K. Mills, 5 dollars; R. L. Parsons, 5 dollars; O. M. Dewing, 3 dollars; H. P. Stearns, 7 dollars; S. F. Mellen, 5 dollars; Ohas. G. Wagner, 5 dollars; S. H. Talcott, 10 dollars; C. C. Eastmas, 5 dollars; C. G. Hill, 5 dollars; G. H. Hill, 6 dollars; Frank C. Hoyt, 5 dollars; total, 162 dollars 50; expenses, 6 dollars; balance, 156 dollars 50.

Owing to the small annual income that will arise from the fund, which will barely purchase three hundred consols, we believe it has been practically decided to apply the income of the fund to the "Hack Tuke Library" rather than add to the number of prizes which are now offered without finding competitors.

RESIGNATION OF DR. HOWDEN.

At the February Meeting of the Managers of the Royal Asylum, Montrose, Dr. Howden intimated his resignation after a service of nearly forty years as Physician Superintendent. The Committee recommended that the Managers should accept Dr. Howden's resignation, and express their deep regret that he should have felt himself constrained to take such a step; that he should have the highest pension allowed by the Lunacy Acts; that he should be retained as consulting physician. Many handsome and well-deserved compliments were paid to Dr. Howden by those with whom he has been intimately associated in the management of the Montrose Asylum, and we assuredly express the feeling of his numerous friends in hoping that he may see many and happy days in the evening of his laborious and useful life.

THE LIBRARY.

The Librarian acknowledges receipt of the following, which have been placed on the catalogue:—

The Insane and the Law, by Pitt Lewis, Percy Smith, and Hawke; presented by Dr. Percy Smith.

Journal of Mental Science, No. 112; presented by Dr. Urquhart.

Micro Photographs of Brain Cells; presented by Dr. Turner.

The Librarian begs to intimate that No. 113 of the *Journal of Mental Science* is required to make up the set belonging to the Association.

NOTICES BY THE REGISTRAR.

Examination for the Certificate in Psychological Medicine.

The following candidates were successful at the examination held on the 17th December, 1896:—

ENGLAND.

Examined at Bethlem Hospital, London.—John Rutherford Gilmour, James Henry Horton.

SCOTLAND.

Examined at the Royal Asylum, Edinburgh.—John Stoddart. *Examined at the Royal Asylum, Glasgow.*—William Stewart Cook.

IRELAND.

Examined at the Eglinton Asylum, Cork.—Elizabeth J. Moffett.

The following were the written questions:—1. What considerations would guide you in advising that a case of insanity should be treated (a) at home, (b) in a private dwelling, or (c) in an asylum? 2. What are the mental symptoms which are frequently associated with and consequent upon chronic epilepsy? Discuss briefly their relation to crime. 3. What is the value of the clinical thermometer in mental diseases? When are febrile and when subnormal temperatures met with in the insane? 4. What do you understand by a "systematised delusion"? Describe a case. 5. Enumerate the various forms of insanity due to or associated with the excessive use of alcohol, and describe briefly the symptoms of each. 6. What questions would you especially consider if consulted as to a man's testamentary capacity? What would lead you to believe he possessed this capacity although his mind might not be sound on all points?

The next examination will be held in July, 1897. Due notice of the day will be given in the *Lancet*, the *British Medical Journal*, and the *Medical Press*.

The examination for the Gaskell Prize will be held at Bethlem Hospital, London, in the same month, and the Examiners are authorised to award a *second prize in this Competition* should one of the candidates attain such a standard as would justify them in doing so.

Examination for the Certificate of Proficiency in Mental Nursing.

The following candidates passed the November examination for the Nursing Certificate in addition to those whose names were published in the January number of the Journal :—

Grahamstown Asylum, Cape Colony.—*Males* : Wallace S. Colegate, William Sherwood, George N. Farley, Peter H. Van der Merwe. *Females* : Charlotte Codd, Florence Robertson, Sarah Whitfield.

Port Alfred Asylum, Cape Colony.—*Female* : Annie Wynne.

Port Beaufort Asylum, Cape Colony.—*Male* : William Henry Campton.

The next examination will be held on Monday, the 3rd day of May, 1897, and candidates are earnestly requested to send in their schedules duly filled up to the Registrar of the Association not later than Monday, the 5th day of April, 1897, as this is the last day upon which, under the rules, applications for examination can be received.

Subjects for the Bronze Medal and Prize, 1897.

The President (Dr. Mickle) has suggested the following subjects for the Essay for the Bronze Medal and Prize of ten guineas, which is open to all Assistant Medical Officers of Asylums, but candidates are at liberty to present an essay on any other subject if they prefer to do so :—

- (1) Heredity in relation to Insanity.
- (2) The rôle of Syphilis in the production of Mental Disease.
- (3) A contribution to the study of Microscopical Change of the Nervous System in Mental Disease.

Further particulars respecting the various examinations of the Association may be obtained from the Registrar, Dr. Spence, Burntwood Asylum, Lichfield.

SANITARY SCIENCE SCHOLARSHIP AT CLAYBURY ASYLUM.

Notice issued on 23rd February, 1897.

The Technical Education Board is prepared to receive applications for a scholarship in sanitary science of the value of £150 a year tenable in the pathological laboratory of Claybury Asylum. The scholarship will be awarded in the first instance for one year, but may be renewed for a second, and possibly for a third year, upon a satisfactory report being received from the superintendent of the pathological laboratory under whose direction the scholar will be required to work. Candidates must be ordinarily resident within the Administrative County of London. In making the selection, preference will be given to a candidate who is a qualified and registered practitioner, and has completed his academic course. The scholar must make such arrangements as to residence as will enable him to devote his whole time to the study of the working and effects of preventable social and industrial causes of insanity.

Applications, containing a full record of the candidates' previous work and references to their professional teachers, must be sent to the Secretary, Technical Education Board, St. Martin's Place, W.C., not later than the 22nd March.

WM. GARNETT,

Secretary of the Board.

NOTICES OF MEETINGS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

General Meeting.—The next General Meeting will be held on Tuesday, the 18th May, in London.

South-Western Division.—The Spring Meeting will be held at Barnwood House, Gloucester, on Tuesday, 27th April. After business Dr. Soutar will open a discussion on "Recoveries in Asylums," to be followed by a paper "On the Systematic Collection of Anthropometrical Data in Asylums," by Dr. Goodall.

South-Eastern Division.—The first Divisional Meeting will be held at the London County Asylum, Cane Hill, Surrey, on Wednesday, 21st April. In addition to business, photographs will be exhibited by Dr. Donaldson, and cases demonstrated by Drs. Boycott and Pope. Dr. Mott will show Macroscopical and Microscopical specimens.

Irish Division.—The next Meeting will be held at the Royal College of Physicians, Kildare Street, Dublin, on Friday, 14th May.

Annual Meeting.—The Annual Meeting will be held in Newcastle, probably in the last week of July.

INTERNATIONAL MEDICAL CONGRESS.

The next Congress will be held in Moscow, in August, 1897. The section of nervous mental diseases is under the direction of Professors Kojewnikow, Korsakow, and Roth of Moscow. The secretaries are Priv.-Doc. L. Minor and Priv.-Doc. W. Serbski, of Moscow.

BRITISH MEDICAL ASSOCIATION.

The Annual Meeting of 1897 is to be held in Montreal upon Tuesday, 31st August, and three following days. The British Association meets in Toronto from 18th to 27th August, so that it will be possible to attend both without loss of time.

Professor Adami is Secretary for this country. Address, 2,204, St. Catherine Street, Montreal.

CONGRESS OF FRENCH ALIENISTS.

The next Congress of French Alienists will be held at Toulouse in August this year. The following subjects have been arranged :—"Differential Diagnosis of General Paralysis," "Infantile Hysteria," "The Organisation of Medical Attendance in Asylums." Dr. Ritti is the President-Elect.

APPOINTMENTS.

POPE, G. STEVENS, L.R.C.P. and S. Edin. (Assistant Medical Officer, London County Asylum, Cane Hill), has been appointed Medical Superintendent of the new Middlesborough Asylum, Marton, Yorkshire.

WHITWELL, JAMES R., M.B. (Edin.), has been appointed Medical Superintendent of the Suffolk County Asylum.

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VOL. XLIII.

PART I.—ORIGINAL ARTICLES.

Gheel and Lierneux, the Asylum-Colonies for the Insane in Belgium. By JOHN SIBBALD, M.D., Commissioner in Lunacy for Scotland.

In the numbers of the Journal for January and April, 1896, I described the recent action of the Berlin authorities in placing a considerable number of the insane poor under care in private dwellings, which illustrates one of the latest ways in which this mode of providing for the insane has been organised. Having in the year 1895 revisited for the third time the well-known colony of the insane at Gheel, in Belgium, and having once in 1895 and again in 1896 visited the recently established Belgian colony at Lierneux, I now propose to describe the present position of these two colonies, which exemplify the oldest systematised method of providing for the insane in private dwellings.

LUNACY ADMINISTRATION IN BELGIUM.

I have frequently found when speaking about the so-called "colonies" that the position which they hold in the general system of Belgian lunacy administration is not fully understood. In order to make their position clear it will therefore be useful to refer shortly to the lunacy administration of Belgium as a whole. This administration is conducted under the provisions of the *Règlement général et organique*, made by Royal Decree in execution of the *Loi sur le Régime des Aliénés* of 1873. The law and the rules founded on it do not deal with any insane persons except those detained by legal authority either in establishments for the insane or in private dwellings, and those who are placed under interdiction or tutelage. No official record appears to be kept of the number of the insane in Belgium unless

they are inmates of establishments for the insane ; but under this designation are included the two colonies of Gheel and Lierneux.

The official Report for 1895 gives the total number thus under official cognisance as 11,819, about 2,400 being in the colonies and the rest being in ordinary asylums.

The asylums and the colonies are under the supervision of an Inspector-General, M. Lentz, appointed by the King, and he is assisted by three Commissioners appointed by the Minister of Justice. The present Commissioners are Dr. Lentz, of the State Asylum at Tournai ; Dr. Morel, of the State Asylum at Mons ; and Dr. Glorieux, of Brussels. In addition to the supervision exercised by these officials, the Burgomaster of the commune in which any asylum is situated is required to visit the asylum at least once every six months, the *Procureur du roi* once every three months, and the Governor of the province, accompanied by a member of the provincial council, once every year. There is also a local Board appointed by the King, which is charged with the special supervision of each asylum, and which has to report once a year to the Minister of Justice.

All the ordinary asylums for the poor in Belgium are the property of religious communities except those at Mons and Tournai, which belong to the State. The appointment of the physician or superintendent of an asylum is, however, in every case made subject to the approval of the Government, and the rules for the administration of each asylum also require the approval of the Government. The organisation of the colonies of Gheel and Lierneux is in each case regulated by special rules under Royal Decree.

The Law and the *Règlement organique* also prescribe the proceedings necessary for the admission of a patient into an asylum, and for his detention and liberation. It is sufficient here to state that no patient can be admitted without an order either of the Burgomaster of the commune or of the Governor of the province ; and a medical certificate must also be given before admission, or in case of urgency within twenty-four hours after admission. The Burgomaster or the Governor is required, after granting an order, to transmit a copy of the order and relative documents within three days to the *Procureur du roi* of the district of the patient's domicile ; and the Superintendent of the Asylum is required to send notice of each admission of a patient within twenty-four hours after admission to the same magistrate.

When sending a patient to Gheel or Lierneux the same proceedings are required as when sending a patient to an ordinary asylum, and the authorities of these colonies have the same legal powers and responsibilities as to the detention of patients as are possessed by the authorities of ordinary asylums.

THE COLONY OF GHEEL.

The legendary origin of Gheel as a place of sojourn for the insane, and the narrative of its development since it emerged into the light of authentic history, has been set forth more than once in the pages of this Journal.* They are given in considerable detail in an account of my first visit to Gheel, contributed to the number for April, 1861, and need not be repeated here. My first visit was in the year 1860, and I made a second visit in the year 1862. The object of the visit in 1895 was to gain information as to the present condition of the colony, and to compare it with my recollection of its condition at the time of my visit in 1862.

The Social and Economic Position of the District.

The commune of Gheel is situated in the east of the province of Antwerp, in a district known as the Campine. It is about 25 miles from the city of Antwerp, and consists of a village of between 3,000 and 4,000 inhabitants, surrounded by 23 hamlets scattered over an area of about 20 miles in circumference. The total population of the commune is upwards of 11,400. The chief occupation of the people is the cultivation of the land, which is in the greater part of the commune of scarcely average fertility, and in certain parts, such as the outlying district of Winkelom, it is sandy and infertile. The occupants of the farms belong to the class of peasant cultivators, and they are in most instances proprietors of the land they cultivate. The farms range in size from five to fifty acres each, many of them including a considerable extent of unreclaimed land. The average rent of arable land is stated to be from 50 to 75 francs the hectare, equivalent to about £1 an acre. The farmers usually keep

* Papers on Gheel have appeared in the following numbers of the Journal :—April, 1858, by Dr. Henry Stevens; April, 1861, by Dr. John Sibbald; January, 1862, by Dr. (afterwards Sir James) Coxe; April, 1862, by Dr. W. C. M'Intosh; April, 1862, by a Commission of the Société Médico-Psychologique; October, 1866, by Dr. John Webster; April, 1867, by Dr. Edmund Neuschler and Dr. John Sibbald; April, 1876, by Dr. P. Maury Deas; January, 1886, by Dr. D. Hack Tuke and April, 1891, by Dr. Margaret A. Cleaves.

cattle, and often pigs and goats. The cattle are in the proportion of about one to each hectare (about 2½ acres). The larger farms have bullocks to help in working the land. A horse is not usually kept in a farm of less than 20 hectares, and there are only two farms in the commune where as many as two horses are kept. As is the case generally over Belgium the farming may be described as gardening on a large scale, the spade being the instrument most in use. As a sample of the stock on a farm, one farm of nine hectares which we* saw may be mentioned. It had three cows, four calves, one bullock, and two pigs. As showing the increase in the value of farms during recent times, resulting from the reclamation of land and other causes, Dr. Peeters informed us that this farm had been purchased for 900 francs at a period not very remote, and that its present value was about 8,000 francs.

The general description of the place and the people given by me thirty-five years ago is still applicable, except that there is now a railway station at the town, and that there is an appearance of greater comfort and prosperity all round. The *chaumière*, with its walls of wood and clay and its roof of thatch, has given place for the most part to the *maison*, with walls of brick and roof of slate. The interior arrangements and the furniture of the houses also conform to a higher standard of comfort. The butter of the Campine has now the reputation of being the best in Belgium, and we found an indication of industrial progress in the use of the centrifugal separator, instead of the old churn, in most of the houses that we visited. Rye bread is not much used now; the bread that we saw being either half rye and half wheat, or wholly wheat. There were fitches of bacon hanging in all the farm houses, and Dr. Peeters told us that bacon and pork are now much more freely used than they were some years ago.

The Administration of the Colony.

The superintendence of the insane and their guardians, and the general administration of the colony, is, like those of ordinary asylums in Belgium, in the hands of a local Board. Under the control of the Board the administration

* I had the great advantage of being accompanied in my visits to Gheel and Liernux in 1895 by Dr. Macpherson, Medical Superintendent of the Stirling District Asylum, and Lecturer on Mental Diseases in the Royal Colleges School of Medicine, Edinburgh. I am indebted to him for much valuable assistance as well as pleasant companionship.

is carried on by Dr. Peeters, the present *Médecin-directeur*. He is assisted by 2 *médecins adjoints*, 2 *médecins assistants*, 1 *réceveur*, 1 *secrétaire*, and 1 *magasinier*. The *médecin-directeur*, the *réceveur*, and the *secrétaire* have each a *commis* to do clerical work. Besides the staff of attendants in the "*infirmérie*," as the small asylum in the outskirts of the village is called, there are four employés of the same class as head attendants, called *infirmiers gardes de section*, who are constantly engaged in visiting the patients in private dwellings.

The patients are of two classes—(1) *indigents*, supported by communal and other public funds; and (2) *pensionnaires*, or private patients. There were at the beginning of the present year (1897) 1,983 patients resident within the commune, 1,809 being *indigents*, and 174 being *pensionnaires*. This indicates a considerable increase in the numbers since my visit in 1862, when the total number was about 800. In the report for 1859, which I have before me, the numbers are given as 698 *indigents* and 102 *pensionnaires*.

The proceeding required for placing a patient in Gheel is, as I have already stated, substantially the same as has already been described for placing a patient in an ordinary Belgian Asylum. Every indigent patient is, on admission, placed in the *infirmérie*, which is under the immediate superintendence of the *médecin-directeur*; and from the *infirmérie* the patient is transferred to the care of a guardian selected by the *médecin-directeur* according to the nature of each case. Patients are not detained in the *infirmérie* longer than five days, unless some special feature of their case makes it necessary to keep them for more prolonged observation. In very exceptional cases, however, patients have been detained for as long as three months. In private cases the arrangements as to the houses in which the patients are to be boarded are generally completed before the arrival of the patients at Gheel, so that in these cases there is seldom any detention in the *infirmérie*. The total number of admissions annually has been for some years about 300. In the year 1894 the number was 268. In addition to its use as an admission station for patients the *infirmérie* also serves the purpose of a hospital, to which patients may be transferred from the care of private guardians on account of either bodily or mental disorder which cannot be properly treated in a private dwelling. At the time of our visit there were 34 male and 36 female patients in the establishment. The arrangements of the *infirmérie*, erected in 1863, resemble in their distinctive fea-

tures those of the Hospice Guislain at Ghent, the plans having been furnished by Professor Guislain himself shortly before his death. The administration of the *infirmérie*, and the treatment of the patients there, is under the immediate charge of Dr. Peeters.

The supervision of the patients in private dwellings is also under the charge of Dr. Peeters, but the regulations do not oblige him to visit every patient personally oftener than twice a year. He sees most of them, however, much more frequently. The work of inspection is more immediately in the hands of the *médecins adjoints* and the *médecins assistants*, who visit at least once a month the incurable patients, and at least once a week those who are regarded as curable, or who for any reason require special medical attention. In many cases daily visits are made. Every patient is also visited once a month by a *garde de section*. The physicians and the *gardes* report daily to Dr. Peeters the visits made during the preceding day and their results, and receive from him such instructions as he may deem necessary. A biennial visit is also paid to all the patients by members of the local committee. The structural condition of the various dwellings is specially under the charge of the secretary.

The remuneration of persons who receive private patients is a matter of arrangement between the relatives of the patients and the persons receiving them. Patients maintained by communes are boarded at rates varying from 60 centimes a day to 90 centimes—50 being paid for a cleanly and useful patient, 70 for a cleanly but not useful patient, and 90 for a patient of uncleanly habits. Besides these payments, which are made to the guardians (*nourriciers*), 25 centimes a day is paid to the administration to cover the cost of clothing and supervision. The bedding and other furniture of the patient's bedrooms is provided by the administration.

There are, besides the bath-rooms at the *infirmérie*, two public bath-houses in the commune; and it is proposed to erect other two, making four in all, one near the centre of each administrative section of the commune. The bath-house at the hamlet of Larum, which we saw, contains six baths and a douche chamber. We were informed that from 25 to 30 patients are bathed there every week. In addition to the baths taken in the two special bath-houses, many patients have baths by medical order more frequently in the *infirmérie* baths.

The Condition of the Patients.

On the occasion of our visit in 1895, Dr. Macpherson and I were most cordially received by Dr. Peeters, and we have to thank him sincerely for the pains he took to give us full opportunity to see the patients in different parts of the commune. They are scattered pretty equally over the district. Some are boarded with families in the village; but the great majority are boarded in the surrounding hamlets and farm-houses. During the thirty-three years, between my visit in 1862 and my visit in 1895, the accommodation of the patients has improved, along with the general increase of comfort among the inhabitants. Only the poorest of the inhabitants now live in houses whose walls are constructed with wood and clay, and which were formerly the usual kind of houses in the hamlets and out-lying districts. No patients are now boarded in such houses. In the slated brick houses, where patients now reside, they are generally provided with bedrooms specially built for them by the proprietors. Each patient has a separate bedroom. It is usually on the ground floor of the house, and no patient is allowed to occupy a room that is not of a size giving at least 3 metres in length, 2 metres in width, and $2\frac{1}{2}$ metres in height, which thus gives a minimum of about 65 square feet of floor, and 530 feet of cubic space in each room. As there are usually two patients in each house the rooms are generally built in pairs, and the cost of their construction was stated by Dr. Peeters to be from 100 to 150 francs for each room, exclusive of the work contributed by the householder. The furniture, which, in accordance with a regulation introduced a few years since, is now supplied by the administration, consists of a wooden bedstead, bedding, a chair, a clothes-box, a clothes-rack, and a strip of carpet for the bedside. Decorative improvements are encouraged by the administration, and flowering plants are supplied gratuitously to the guardians from the gardens attached to the *infirmerie*.

In none of the houses that we saw were there more than two patients, and Dr. Peeters informed us that this is in accordance with a rule which has now been in force for several years, and to which there is at present only one exception. In this exceptional case there are three patients boarded in the house. The advantage of restricting the number of boarders to not more than two in each house, is

the result of the large experience obtained in Gheel, and its advantage is being more and more recognised in Scottish experience. As Dr. Peeters said, "This restriction of the number is necessary to prevent the patients being placed on one side, and the family of the guardian on the other." A household can, as it were, absorb two boarders and make them share fully in the family life ; but with more than two this can seldom be done. The amount of liberty the patients enjoy depends on the individual character of each, some being allowed to go about without any restriction, while others are not permitted to go beyond the precincts of their guardian's farm without being accompanied.

The food of the patients is the same as that of their guardians, but that is not a high standard of nourishment. Butcher meat appears to be sparingly used in the district. There are generally four meals each day—breakfast at 7.30 a.m., dinner at noon, an afternoon meal (*gouter*) at 4 p.m., and supper at 7 p.m. Coffee and bread and butter are the usual food, except at dinner, when there is a stew consisting of potatoes and other vegetables, with bacon and milk. The quantity of bacon is not large, but it is said to be used much more freely now than it used to be. The bread is sometimes made entirely of wheat, but it is generally made from a mixture of wheat and rye. Hams and flitches of bacon were seen hanging to the rafters in all the houses we visited. Dr. Peeters was in every case careful to inspect the quantity and quality of the bacon, the butter, and the bread.

The clothing of the patients whom we saw was generally poor compared with the clothing of the working classes in this country, but it was sufficiently warm for the season and was similar to that generally worn by the guardians with whom they lived. The cost to the administration of clothing the indigent patients amounts to an average of 40 francs a year for each patient.

The patients appeared to be generally treated as members of the families of the guardians. They take their meals with them at the same table ; a considerable number go to church with them ; and as far as possible they seem to share in their work and their amusements. We generally found the patients at the time of our visit engaged in some household occupation or working along with one of the family in the garden or on the farm. When they were willing to be communicative they expressed themselves as being satisfied with the way in which they are treated, and none complained of

being ill-used by their guardians. The general impression which a visit to Gheel produces as to the condition of the patients depends in a great degree upon the standard of comfort that is adopted by the observer. One cannot be long in the district without recognising that the mode of life among the inhabitants does not conform to a high standard. Though considerable improvement has taken place during recent years, the Campine remains the poorest part of Belgium, and the inhabitants of Gheel cannot be described as in an advanced stage of civilisation. Many of the houses that we saw were comfortable and pleasing in their arrangements, but in others it was evident that the cultivation of the refinements of life had not yet found a place. According to the standard of living in the district, however, as far as our means of observation went, the patients are well provided for, their accommodation being in most cases better than the accommodation of their guardians.

Most of the patients that we saw seemed to be well suited for being provided for in private dwellings. There are, however, a certain number who in my opinion would be more satisfactorily provided for in ordinary asylums. Of these, one class consists of the deeply demented or idiotic patients, who are so helpless or of such degraded habits that they require the constant attention of a trained nurse to keep them clean and to counteract the progress of degradation. Such patients do not derive any benefit from domestic surroundings, and though instances occur in which they are admirably cared for in private dwellings, they will not as a rule receive the kind of care they require from guardians who are necessarily much occupied with their own household affairs. Another class of patients which one would gladly see excluded from Gheel are those who require constant supervision on account of their insane conduct, such for example as those whose hands we found restrained by leather gloves and similar apparatus. These methods of restraint are still occasionally used in the cottages, but we were told that the restraint chair, the camisole, the belt, and the hobbles, which I saw when I made my first visit in 1860, have long been discarded. Female patients of erotic tendency, or of facile disposition subjecting them to danger of sexual injury, ought also to be excluded.

Results to the Patients.

In considering the results of the treatment of the patients at Gheel, one naturally compares the condition of the patients

there with the condition of patients in an ordinary asylum. Several things, however, have to be kept in view in making this comparison. One of the most obvious of these is that Gheel does not receive patients suffering from every kind of insanity. Under the regulations, patients who are violent or aggressive in their conduct, those who are intractable or dangerous to themselves or others, are not admissible. When such patients are sent to Gheel they are detained in the *infirmerie* until arrangements can be made for their transference to an ordinary asylum. Gheel is not to be regarded therefore as performing all the functions of an asylum, the system of treatment being admittedly unsuitable for a considerable number of the insane. On the other hand it must be kept in view that the patients at Gheel do not belong exclusively to the chronic and incurable class. The statistics show that they include a considerable proportion of curable patients. The returns for the five years 1889-93 represent 21 per cent. calculated on the admissions (excluding readmissions) as having been discharged recovered. This percentage is instructive as giving some idea of the proportion of curable patients received. It does not, however, afford the means of estimating the comparative efficiency of Gheel as a place of cure, as it is impossible to ascertain the proportion of curable patients who, owing to the regulations and from other causes, are excluded from the colony. I doubt indeed whether it would be practicable, even with a much fuller knowledge of the facts, to make a reliable statistical comparison between the curative efficiency of Gheel and that of ordinary asylums. Such observation as can be made during a two days' visit would also be an inadequate basis on which to found an opinion as to the curative efficiency of Gheel.

The same kind of difficulty presents itself in regard to the death-rate. The average rate for ten years 1884-93 was 7.3 per cent. There is no published statement which gives the general death-rate of the insane in Belgium. The death-rate of the insane in England and Wales for the years 1886-95, given in the Report of the English Lunacy Commissioners, is 9.9 per cent.; and the death-rate of the insane in Scotland given in the Report of the Scottish Commissioners for the same ten years is 7.6 per cent. Before the significance of these figures could be justly estimated it would be necessary to know the proportion of patients suffering from the graver forms of bodily disease that is included in each set of statistics. I feel, therefore, that it would be unsafe to draw any definite

inference from the death-rate at Gheel. In the opinion of Dr. Peeters, the statistics of Gheel, both as regards the number of recoveries and as regards the death-rate, should be considered satisfactory.

The impression left on my mind by my recent visit to Gheel, is that for the large majority of the patients now resident there, the system of treatment is preferable to that of an ordinary closed asylum. For the patients of the class admitted to Gheel who are able to share in the family life of a private household, there are more congenial surroundings than in an ordinary asylum. They are less completely divorced from their accustomed habits of life; their individuality is more fully preserved; they escape the deteriorating influence which usually results more or less from constant association with aggregations of the insane; and they often form ties of cordial affection with their guardians or with their families, which are not only a source of happiness, but are also beneficial to their mental and moral nature. I mention these advantages not merely on the strength of what was necessarily a very cursory inquiry into the experience of Gheel; but as the result of a very wide knowledge of the treatment of the insane in private dwellings in Scotland. On the other hand, as I have already said, there appeared to me to be patients in Gheel who could have been better provided for in ordinary asylums. What proportion such patients bear to the total number resident I could not determine, but I should not think it probable that the proportion is very large, and I feel no doubt that it is much smaller than it was at the time of my previous visits.

Serious accidents to patients have been rare in Gheel, but during the last three years they have been more numerous than usual. In the year 1894 two men were killed on the railway by passing trains, one man was asphyxiated in a burning house owing to his having gone back into the house to recover some things belonging to him, and one patient committed suicide. In the year 1895 there was no serious accident, but in 1896 a man had his leg crushed on the railway by a train, and died from the effects. During the seven years preceding 1895 there had been only one case of pregnancy among the patients, but in that year there were two cases. There has never been a case in which a male patient has been suspected of having sexual relations with a female patient.

The number of escapes does not seem large considering

the amount of freedom enjoyed by the patients. During the last five years the average annual number was five, and in several of these cases the patients had returned to their families, and were found to have improved so much in their mental condition that they were retained at home.

Results to the Public.

As there is no published document which gives the cost of maintenance of the indigent insane in Belgian Asylums, it is impossible to make any definite comparison between the cost of keeping patients in Gheel and the cost of keeping them in ordinary asylums. There can be no doubt, however, that the cost in Gheel, which is on the average about a franc a day, or five shillings and ninepence a week, is considerably below the cost in ordinary asylums; and it will still remain considerably below that cost even when full allowance is made for the fact that unruly patients and others of the more expensive kind are excluded from Gheel. The present cost of maintenance of patients in County and Borough Asylums in England and Wales is nine shillings a week, and in District Asylums in Scotland it is eight shillings and tenpence. In the case of Gheel it must be kept in view that there is no expenditure on buildings to be met by the localities to which the patients belong, as is the case in regard to ordinary asylums. The Reports of the English Commissioners do not give data for ascertaining the expenditure for County and Borough Asylums, but it appears from the data given by the Scottish Commissioners that the assessments in counties and boroughs on account of the land and buildings for District Asylums in 1895 amounted to five shillings and twopence a week for each patient. The total cost to the public for each patient in District Asylums in Scotland is therefore about fourteen shillings a week. Even assuming, as may perhaps be true, that the cost of buildings and maintenance in ordinary asylums in Belgium is considerably less than it is in Scotland, there must still be a great difference as to cost in favour of Gheel.

The financial results to the commune of Gheel itself from the practice of keeping patients are evidently important. The following figures are only rough estimates, but as they have been revised by Dr. Peeters they may be taken as substantially correct. From £25,000 to £30,000 is annually received in Gheel on account of the insane. The amount of actual cash disbursed by the guardians for articles con-

sumed by the patients is estimated by Dr. Peeters at not more than £4,000. The cost of administration, including the *infirmierie* and clothing, is considerably under £4,000. There is thus about £20,000 a year to pay for the farm produce consumed by the patients, to the production of which they themselves largely contribute, and to remunerate the guardians for the care of the patients. Such a sum coming as an addition to the ordinary fruits of industry is sufficient to account for the increase in wealth which has manifestly taken place in recent times in the district, for the improvement of the dwellings, both as regards their construction and their internal comfort, and for the raising of the standard of food and clothing.

A question that remains to be noticed is this:—Is the presence of so large a number of the insane injurious to the inhabitants of Gheel? This question substantially resolves itself into two. Are the insane a source of public danger? and, Is the mental health of the inhabitants injuriously affected? In answer to the first question we have the opinion of the inhabitants themselves, as far as I was able to ascertain it, and this is that they do not regard the patients as a source of danger; and this is supported by the fact that for the past fifty years no inhabitant has been seriously injured by a patient. It is recorded that in the year 1844 the burgomaster of Gheel was killed by a patient. It is right to mention this fact, but it ought also to be mentioned that the patient referred to was an inhabitant of Gheel who became insane there, and not a patient sent to Gheel from another locality; and irrespective of that circumstance it cannot be taken as evidence that danger is to be apprehended from the present position of matters. When that unfortunate event took place the code of regulations now in force had not been introduced, and the system of management was as different to the present system as the management of ordinary asylums was different to that of asylums at the present day. It may be said, indeed, that there is no evidence that the patients are now a source of special danger. The second question—Is the mental health of the inhabitants of Gheel injuriously affected by the presence of the patients?—could only be answered definitely if it were ascertainable whether insanity is more frequent among the ordinary inhabitants of Gheel than among those of localities where there is no aggregation of insane boarders. Statistical data in regard to this are unfor-

tunately not available, and there is therefore only the general opinion of the inhabitants to guide us. This general opinion is, however, decidedly against the view that there is any special prevalence of insanity among them, and Dr. Peeters concurs in this opinion. It would, I believe, require very clear evidence to convince those who have much knowledge of lunacy administration that association with the insane is in itself a cause of insanity. If it were so, the fact would have been made evident long ago in the experience of asylums, where attendants spend their lives in an atmosphere of insanity much denser than that which exists at Gheel. And though the mental strain due to the irksome and anxious nature of their duties often tells severely upon asylum attendants, I am not aware of any case in which it can be affirmed that an attendant has become insane as the result merely of association with persons of unsound mind.

THE COLONY OF LIERNEUX.

Much that has been said in the foregoing pages about the position of Gheel and its administration is applicable also to the colony of Lierneux. It will, therefore, be unnecessary to go at equal length into a description of this newly-created organisation. Its special interest is due to the way in which it originated. It is the result of an effort, attended with more success than was generally anticipated, to introduce by administrative action an organisation substantially similar to that of Gheel in a district where the practice of receiving insane boarders had not previously existed. The site of the colony is on the southern border of the province of Liège, in the highlands of the Ardennes. The Commune of Lierneux extends over an area of about 24 square miles, being about nine miles long and about six miles broad at its greatest breadth. The village of Lierneux, which is the principal place in the commune, is about seven miles west of the railway station of Vielsalm, on the Liège and Trois Vierges Railway.

The Social and Economic Position of the District.

The inhabitants of the commune are of the mixed Celtic and Romanic stock, called Walloon. They are descended from the old Gallic Belgæ, who held their ground among the Ardennes mountains, and retained their ancient customs and language when the rest of Gaul was overrun by the Germans, but who eventually came under Roman influence,

especially as regards their language. The Walloon language is now a *patois* of northern French with a considerable infusion of old Celtic and low German elements.

The population of the commune is about 2,600 inhabitants, or rather more than 100 to the square mile. Besides the village of Lierneux there are 18 hamlets scattered over the commune, several of which have a church and parsonage. No railway or navigable stream passes through the commune. The district is purely pastoral and agricultural. The average size of the farms is about 12 hectares (30 acres), and their rentable value about 60 francs the hectare. They are generally the property of the occupants, there being no large landed property within the commune. The people may be described as generally in poor circumstances, though moderately comfortable, the land not being of the most fertile kind, and the principal crops being rye and oats. The climate is healthy. The local administration is in the hands of a communal council elected by the inhabitants.

The Origin of the Colony.

In the year 1883 more than half a century had passed during which the authorities of the Province of Liège had repeatedly discussed the question of making more satisfactory provision for their insane poor, but without any result beyond the adoption of expedients that were recognised on all hands as inadequate.

In 1883 M. Oudart, then Inspector-General of Belgian Asylums, proposed to M. Pety de Thozée, who was then, as he is now, Governor of the Province, that a colony similar to Gheel should be established in the Province of Liège for patients belonging to the Walloon districts of Belgium.

The kingdom of Belgium consists of two nearly equal parts, one to the north, in which the common speech of the people is Flemish, and one to the south, including the provinces of Hainault, Liège, Namur, Luxembourg, and a part of the province of Brabant, in which the common speech of the people is Walloon. These two parts of the kingdom present considerable differences also in regard to the customs, the habits, and the food of the inhabitants. Gheel, which belongs to the Flemish speaking part, is therefore unfitted to receive patients from the southern provinces, and M. Oudart was of opinion that a colony on the Gheel model should, if possible, be established, which would provide for patients belonging to these provinces.

The proposal was favourably received by M. Pety de Thozée, and after due enquiry it was resolved to endeavour to carry it out, the commune of Lierneux being selected as the most suitable locality for the experiment. As was to be expected, difficulties presented themselves at the outset. When the Permanent Committee of the Council arrived at Lierneux to make enquiry as to the preliminary steps that should be taken with a view to the creation of the colony, it was, as described by M. de Thozée himself, "very ungraciously received. The burgomaster declared that 'he would resort to force to prevent the initiation of an institution from which he apprehended the worst consequences to the people under his administration. Nothing is so contagious as insanity,' he said, 'and while I am burgomaster no lunatic shall ever enter Lierneux.' This beginning," adds M. de Thozée, "was not encouraging; but happily everyone did not share the apprehensions of this honest, but more zealous than enlightened burgomaster."* It must be admitted that the attempt to found a new Gheel required a considerable amount of courage and resolution. The project was regarded by many well-informed persons as impracticable. The practice of receiving the insane at Gheel, it was said, had originated long ago in an accidental circumstance, around which a halo of superstitious or religious feeling had gathered; and it could not be expected that any community would be induced, without some such adventitious impulse, to devote themselves to an occupation so irksome and distasteful as the care of the insane. It was also thought that no community that had not been gradually trained for centuries, like the people of Gheel, would be found possessing the necessary qualifications for dealing with the insane in a sympathetic and intelligent manner.

The Liège authorities prudently resolved to proceed with great circumspection. They therefore arranged that the organisation at Lierneux should at first be administered as an *annexe* of the institution at Gheel; and on the 18th of April, 1884, four patients—two men and two women—were transferred from Gheel to Lierneux, accompanied by a *garde de section*, who remained at Lierneux to instruct the guardians as to the way of managing and treating the patients. After this step had been taken applications for patients by the inhabitants began, and they soon became

* *Discours de M. le Gouverneur à l'ouverture du Conseil Provincial de Liège, 6 Octobre 1896.*

more numerous than it was thought prudent to grant. The authorities became satisfied, however, after a few months' experience, that the future success of the colony was assured, and they applied for, and, in spite of the opposition even of M. Oudart himself, who thought things were going faster than was wise, obtained a Royal Decree in April, 1885, giving the Colony of Lierneux an independent constitution of its own, and disjoining it from the administration of Gheel. At that date there were 27 patients at Lierneux, and other 17 were on the point of being sent. There were in July, 1896, when I made my second visit to Lierneux, 420 patients.

The Administration of the Colony.

To make up for the difficulties attendant on the creation of an entirely new colony for the insane, the Liège authorities, in the organisation of Lierneux, were free from some of the difficulties met with at Gheel when it was first brought under official regulation. They had the experience acquired at Gheel to serve as a guide; they had no time-honoured abuses to reform; and they were unfettered by the existence among the inhabitants of antiquated views as to the way in which the insane should be provided for. The regulations adopted by the Provincial Council, approved by the Minister of Justice, and signed by the King, for the administration of the colony at Lierneux, are thus invested with a peculiar interest.

The governing body of the colony is a Board composed of seven members, three of the principal officials of the province being members *ex-officio*, one being the burgomaster of Lierneux, or one of the aldermen (*échevins*) chosen by the Governor, two being chosen by the Permanent Committee of the Provincial Council, one of whom must be a physician, and one being appointed by the Minister of Justice. Any commune or hospice, which has not less than twenty-five patients at Lierneux, may be represented at the meetings of the Board by a delegate, who has, however, only a consultative voice. This Board has the same duties and responsibilities in regard to the colony as the local Boards of asylums have in regard to those institutions in Belgium. The regulations for the admission and discharge of patients are, as has been already stated, the same as for the admission and discharge of ordinary asylum patients.

The chief executive officer of the colony is the *médecin*

directeur, who is appointed by the King. There are also a secretary and treasurer who are appointed by the Permanent Committee. The secretary has, in addition to his duties as clerk to the Board, the chief non-medical superintendence of the colony. He is responsible for seeing that all statutory requirements in regard to the admission and discharge of patients and the licensing of guardians are duly complied with; he has the non-medical management of the *infirmérie*, and the superintendence of the houses in which patients are boarded. The treasurer has the management of all the financial business, and performs the duties of storekeeper. All the executive officers perform their duties under the control of the Board. The *médecin directeur* visits the curable patients once a week or oftener, according to the requirements of each case; he visits the incurable once a month. The *gardes de section*, who act under his direction, visit every patient twice a week.

There is, as at Gheel, an *infirmérie* where all patients are placed at first after their arrival at the colony, and which serves as a hospital for the treatment of every form of illness, either mental or bodily, which is unsuitable for treatment in a private dwelling; and it contains the administrative offices for the whole colony. It is unnecessary to say anything further here about the *infirmérie*, as it corresponds in every way to the *infirmérie* at Gheel, which has already been described. At the time of my visit in 1895 there were only eight male and five female patients in the establishment.

The regulations made by the Provincial Council provide in considerable detail for the mode of administration, for the duties of the officials, the rules to be observed by the guardians, and the accommodation, food, clothing, and treatment of the patients. They are supplemented by a code of local regulations instituted by the Communal Council of Lierneux. These communal regulations place the patients under the special protection of the local police. The inhabitants are forbidden to annoy or irritate them in any way. The keepers of public-houses are not allowed to give the patients spirituous liquors, and are required to report to the police or to the authorities of the colony any who misconduct themselves, and are also required to report any who stay in their premises after four o'clock in winter and after eight o'clock in summer. Under the communal regulations also, the burgomaster and

magistrates may order any patient to be placed in the *infirmerie* whom they regard as dangerous or offensive to public decency, and the guardians are made responsible for preventing ill-conducted patients from wandering about the streets or public places. A special rule which gives a touch of local colour to the code, forbids any patient to smoke an uncovered pipe in the neighbourhood of a farm-steading. Contraventions of the regulations are made punishable by fines of not more than twenty-five francs, and by imprisonments of not more than eight days. As the regulations framed by the authorities of the Province contain similar provisions to those framed by the communal council, their adoption by the two authorities may be regarded as a convention between them; and the arrangement seems reasonably fitted to conduce to good administration.

The guardians are divided into two classes: (1) *hôtes*, who receive private patients; and (2) *nourriciers*, who receive indigent patients. The number of *hôtes* is, however, comparatively small, the number of private patients given in the last published report (1892) being only six, while there were at the same date 343 indigent patients. All guardians require to be registered, and no persons are admitted to the register who have not satisfied the Board as "to their morality, to their carefulness and cleanliness, to the wholesomeness and abundance of the food to be given to the patients, to the sufficiency of the accommodation in their houses, and to the satisfactory sanitation and ventilation of the apartments to be occupied by the patients." Any disobedience of orders or infringement of the regulations renders a guardian liable to be struck off the register. In the case of indigent patients and of private patients paying similar rates of board the allocation of patients to guardians is under the control of a committee, with the advice of the *médecin directeur*. For patients paying higher rates of board the guardians may be chosen by the persons responsible for the payments; but all arrangements made with the guardians in these cases must be reported to the committee, and the guardians and patients are subject to the same conditions as to control and inspection as exist in regard to indigent patients and their guardians. No guardian is permitted to receive patients of different sexes. The daily rate of payment for indigent patients sent to the colony is at present 1 franc 40 centimes. Out of this 85 centimes is paid to the *nourricier* for a working patient, 95

centimes for a non-working patient, and 1 franc 10 centimes for an uncleanly or an epileptic patient. The difference between these payments and the 1 franc 40 centimes is retained by the administration for the cost of management, including inspection, medical attendance, and clothing.

The legal proceedings necessary for placing a patient in the colony of Lierneux are as at Gheel the same as those required when a patient is sent to an ordinary asylum. The powers of the Board and of the officials as regards the detention of the patients, and the enforcing of such treatment of them as may be desirable, are thus the same as are possessed by the Board and the officials of an ordinary asylum. The regulations referring to the discharge of patients, to the occurrence of deaths, and to cases of escape, are also substantially the same. It is provided, however, in regard to the use of restraint and seclusion, that such measures are only to be adopted "in quite exceptional cases, and they must not go beyond the temporary employment of the *camisole*, the *caleçon de force*, the *ceinture*, and other similar measures ordered by the medical officers."* No guardian is permitted to employ any such measures without medical order. "All classes of the insane may, according to one of the regulations, be placed in the commune of Lierneux except those in whose case it is necessary to use continuous restraint or coercion, suicidal, homicidal, or incendiary patients, those who have made frequent escapes, and those whose condition makes them disturbers of public order or offensive to decency." There is reason to believe that this regulation may be modified before long so as to restrict still further the class of patients who may be admitted. But even under the proposed modification many patients will still be sent suffering from recent and acute mental disorder, and also patients suffering from chronic insanity who require medical treatment. Lierneux is, therefore, to be regarded both as a place of detention and also as a curative establishment.

Since the year 1884, when the colony was established, 1,039 patients had been received up to 25th May, 1895, the date of my first visit. Of these 632 had either been dis-

* The use of mechanical restraint is not regarded with so much aversion in Belgium as it is in this country. The subjection of a patient in a private dwelling to restraint is therefore not thought so much out of place there as it would be in this country. On the occasion of my visit in 1896, however, the only patient in restraint was one who was wearing the *camisole*.

charged or had died, leaving 407—232 men and 175 women—resident in the colony on that day. Some interesting statistics which throw light on the nature of the colony are given by Dr. Deperon, the *médecin directeur*, in a printed Report for the year 1892. There were on the 31st December of that year 349 patients in the colony. Of these 6 were private patients and 343 were maintained by their respective communes; 38 were regarded as curable and 311 as incurable; 278 are described as cleanly in their habits, and 71 as more or less dirty; 184 were engaged in some form of work and 165 were idle. Of the 184 working patients 93 were engaged in household work and in helping to take care of children of their guardians; 69 were engaged in farm work, and 20 were employed as sempstresses, shoemakers, carpenters, blacksmiths, masons, and in the making of hones, which is an industry special to the locality. The forms of insanity from which the patients suffer may be indicated by the following extract from the Report as to the patients admitted during the year 1892:—

"Formes morbides dans les admissions.

	Hommes.	Femmes.	Total.
Mélancolie et ses associations...	5	8	13
Manie et délire	13	12	25
Démence à divers degrés ...	4	7	11
Paralyse générale	9	9	18
Alcoolisme	20	—	20
Epilepsie	5	3	8
Idiotie et imbecillité	16	22	38
	<hr/> 72	<hr/> 61	<hr/> 133 "

This statement shows that patients are being sent to Lierneux who are not suitable for such an organisation. In this view, as I shall have occasion to show further on, Dr. Deperon concurs. It is without surprise, therefore, that we find in the Report that among the patients discharged in 1892, 26 were removed for the following reasons—as dangerous to public safety, on account of destructive, suicidal, or immoral tendencies, from their disposition to escape, and from insubordination. It speaks well for the supervision that is exercised over the patients that no serious accident has occurred since the establishment of the colony involving injury either to the patients or the inhabitants.

The Condition of the Patients.

On the occasion of the visit by Dr. Macpherson and myself in 1895, and of my visit in 1896, we were received in the most cordial manner by Dr. Deperon, and we have to thank him for the trouble he so courteously took to show us everything we desired to see concerning the administration of the colony and the condition of the patients. Our visit to the patients in private dwellings in 1895 included those in the village of Lierneux and those in the hamlets of La Vaux, La Falise, and Bru. In all we visited about 50 houses, and we saw about 100 patients. Judging from what we saw the standard of comfort in the district is fairly good, somewhat higher than at Gheel, not so good as in the better class of lowland agricultural districts in Scotland, but considerably above some of the highland crofter districts. We carefully inspected the accommodation for the patients, and enquired into their dietary, their clothing, and their treatment generally, and we were favourably impressed by what we saw. Instead, however, of giving a detailed account of the information we gathered, I think it will be more useful to avail myself largely of quotations from a Report by Dr. Deperon, of December, 1894, addressed to the Permanent Committee. These quotations give some information which we could not possibly give from personal observation or enquiry. They do not show an undue desire to give a favourable impression of the way in which the patients are treated, and none of the statements they contain conflicts with the results of our own enquiries.

With reference to the kind of accommodation given to the patients, Dr. Deperon says:—"It must not be supposed that the same conditions of comfort are to be found in the houses of the guardians as are met with in closed asylums. The general tone at Lierneux is rustic simplicity. But one may enter at will the houses of the guardians; they are freely open to relatives, to friends, and to visitors to the colony, both medical and non-medical. There are some of the houses which will bear comparison as to neatness and tidiness with the best kept wards of a hospital. Every patient has the exclusive use of a room, generally the best in the house; it is of variable size, according to the means of the householder, but always clean, airy, carefully floored with tiles or wood, the walls usually whitewashed, but sometimes papered and ornamented with chromo-lithographs

and engravings. Formerly the rooms and the windows left much to be desired, and there are still some which are not above reproach; but year by year defects are disappearing, and the houses are daily being improved in their hygienic arrangements or being replaced by new habitations, into which air and light have abundant entrance. The furniture of a patient's room consists of an iron or wooden bed, a table, a chair, and a bedside carpet. The bedding is always clean; the mattress of chaff, frequently renewed, is healthy and comfortable. The sheets are cotton, the blankets are of wool and are more or less numerous, according to the season. There is almost always a coverlet of bright colour, which gives the room quite a gay appearance."

The 39th article of the regulations, which deals with the food of the patients, lays down precise rules as to the amount and kind of diet, one rule being that every patient must have over two pounds (one kilogramme) of butcher meat in the week. Dr. Deperon, however, points out that it is impossible to secure the observance of such rules. "It is impossible," he says, "to impose fixed and invariable rules on a whole population composed of families whose habits and conditions of life differ one from another. The food of the patients is everywhere the same as that of their guardians, simple and frugal, but sufficient and never restricted to fixed rations. It is true that animal food plays a small part in the alimentation. Pork is, however, especially in winter, used in considerable quantity. It is rare, except on Sundays and feast days, that butcher meat forms a part of the habitual meal. The number of meals is five in summer and four in winter. Breakfast consists of bread and butter and coffee; there is a similar meal at ten o'clock. For dinner there is milk, or meat soup, potatoes with bacon and vegetables, salad or cabbage, and for beverage coffee and sometimes beer. Supper consists of potatoes and bacon, bread and butter and coffee. This bill of fare," Dr. Deperon says, "comes far short of the prescriptions of the regulation;" but he adds with some show of reason, "it is not possible with the present rates of payment to the guardians of 85 to 95 centimes a day, to require from our peasants, without serious prejudice to the vitality of our colony, the introduction of butcher meat into the regular diet of the patients, and as a consequence into the diet of the whole family of the guardian. The requirements of article 39 constitute an ideal which is attained in our

infirmier, and probably in closed asylums, an ideal towards which we should direct all our efforts; but for outdoor patients the deficiency of animal food in the dietary is largely compensated by the frequency of the meals and the good effects of life in the open air. It must be kept in view also that the dietary which has just been described is applicable to the insane of the indigent class who are little accustomed in their previous life to a high standard of nourishment." This quotation from Dr. Deperon's Report gives a more complete view than any mere visitor to the colony could give of the position of the patients in regard to their food.

The only further quotation to be made from the Report refers to the kind of cases sent to Lierneux, and Dr. Deperon's opinion as to the class of cases for which such an organisation is suitable. This passage seems to me sufficiently important to be given in full. According to an article in the regulations already referred to (p. 454), all classes of the insane, with certain specified exceptions, may be admitted to Lierneux. Dr. Deperon is of opinion that the list of exceptions should be added to, and I not only concur in his opinion, but would be inclined to make the list even longer than he proposes. His suggestion is that the rule should be altered so as to give effect to the following ideas:—"The patients admitted should be persons who can benefit by treatment in a colony (*système familial*), that is to say, patients in good bodily health, knowing how to use the liberty accorded to them without abusing it, fond of work and of amusement, and who have still a place in their heart for those feelings which family life awakens. The system of colonies cannot be called on to replace absolutely the closed asylums, but it is suitable for cases of a certain class, and it fills an important place among the methods of providing for the insane, both from an economical and a therapeutic point of view. It is unsuitable for the following classes:—(1) patients reduced to a mere vegetative condition of life; (2) idiots of the lowest class; (3) patients suffering from organic dementia whose cerebral tissue is undergoing progressive destruction; (4) patients in the last stage of general paralysis; (5) the majority of epileptics; (6) patients in states of physical debility, who could not be removed without aggravating their condition; and (7) all patients of dirty habits, or likely soon to fall into such habits."

THE POSITION WHICH SUCH ORGANISATIONS AS THE COLONIES OF GHEEL AND LIERNEUX WOULD OCCUPY IN A COMPLETE SYSTEM OF LUNACY ADMINISTRATION.

I have thought it desirable to place the foregoing account of the organisations at Gheel and at Lierneux before the readers of the Journal as they constitute the most notable examples of one of the methods of providing for the insane. The colony of Gheel will always hold a position of exceptional interest in the history of our specialty. Several years have elapsed since a detailed account of its condition has been given, and there is an advantage in placing on record from time to time the progress of its development and the views that are held regarding it. The colony of Lierneux, which had not hitherto been described, seemed to be worthy of notice, as the governmental creation in 1885 of an organisation similar to that of Gheel constituted a new departure in lunacy administration.

In order to understand the position which in a complete, or ideal, system these colonies would hold in relation to other organisations which provide for the insane, we must keep in view that they cannot furnish suitable provision for every class of patient. There are two classes for whom they cannot make suitable provision. These are (1) those requiring the more constant supervision and control which are provided in ordinary asylums, and (2) those harmless patients in states of chronic insanity who can be adequately provided for in circumstances more nearly resembling those in which they would have lived if they had not been insane. The colony of Gheel for example does not provide as an ordinary asylum does for patients whose insanity makes them dangerous to themselves or others, for those who out of pure mindlessness are apt to wander into circumstances of danger, or for those who need for their efficient treatment to be placed in an institution furnished with full hospital equipment. For these the arrangements of an ordinary asylum are necessary. On the other hand it must also be recognised that though the patients in such a place as Gheel have the undoubted advantage of not being dissociated from the ordinary interests of life to the same extent as those in ordinary asylums are, the position of a patient in Gheel is after all not so desirable that anyone should be needlessly sent there. There is, to begin with, the fact that being sent to Gheel involves the imputation of insanity just as much as being sent to an

ordinary asylum does ; and those patients who feel it to be a degradation to be publicly declared insane—a feeling which rightly or wrongly certainly exists, and must be taken into account—are saved little of that feeling of degradation by being sent to Gheel instead of to an asylum. The legal proceedings required for the admission of a patient to Gheel or Lierneux are the same as those for admission to an asylum ; and after a patient is admitted the officials have the same legal authority to control or coerce him as the officials of an asylum would have. It must be recognised also that the disadvantages of being in daily contact with other persons of unsound mind are not absent at Gheel. The large number of the insane is a prominent feature in the social organisation, which if not always obtrusive makes its presence more or less continually felt. The aggregation of the insane is not so concentrated as in an ordinary asylum, but it is sufficient to be very apparent, and to prevent a patient resident there from experiencing in full measure the curative influences of association with persons of sound mind.

There is therefore a wide difference between providing for a patient in a colony and providing for him in a private home in a district not regarded as specially an abode of the insane. Being sent to such a private home does not involve being publicly declared to be insane, and the surroundings of a patient there are quite in accordance with ordinary sane conditions of life. The position of patients at Gheel is not identical, for example, with the position of pauper lunatics in Scotland, where they are for the most part sparsely distributed over a wide extent of country, and where the influence of the supervising authority is constantly directed to restrain tendencies to the aggregation of patients in particular districts.

The lesson that may be learned from Gheel is that a very considerable number of the insane generally provided for in ordinary asylums may be suitably provided for by an organisation which places them in a position more nearly resembling the conditions of ordinary life, where they do not feel themselves so completely dissociated from the rest of mankind, and where the personal liberty is less interfered with. It provides for curable as well as incurable patients. The medical officers of the colonies are all physicians whose lives are exclusively devoted to the study and the treatment of insanity, and curable patients and others requiring special

attention can receive the same amount of medical supervision as they would do in an ordinary asylum.

The true position of a colony such as Gheel in an ideal system of lunacy administration is, therefore, intermediate between the ordinary asylum and the boarding of patients in districts not specially devoted to the care of the insane. And the effort of the ideal administrator would be, while utilising it for the intermediate class of patients who are suitable for it, to prevent it, on the one hand, from receiving those patients who can be better cared for in an ordinary asylum, and to prevent it, on the other hand, from being used to the exclusion of other modes of providing for the insane which are still more in accordance with the conditions of life amongst persons of sound mind.

The Gheel type of colony seems, however, to be worthy of careful consideration by the authorities in localities where there is great difficulty in providing for patients in private dwellings except under some special arrangements such as those at Gheel. There are many asylums a large number of whose inmates might be provided for in such colonies under less artificial conditions than are possible in any kind of asylum. The oft-repeated statement that an organisation such as Gheel must be of spontaneous growth, and cannot be administratively created, is shown by the creation of Lierneux to be without foundation. The lesson has already been learned in Paris, where the authorities resolved, in 1892, to establish a colony at Dun sur Auron. This colony has now attained considerable proportions, and I hope to be allowed to submit a short notice of it to the readers of the *Journal* in a future number. In the meantime I trust that the present paper may be found of some use.

Atypical and Unusual Brain-Forms, especially in Relation to Mental Status: A Study on Brain-Surface Morphology.
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(Continued from p. 248, April, 1897.)

CHAPTER IX.

A STANDARD OF ABERRANT CONFORMATIONS OF GYRES AND FURROWS FRAMED AS A TEST, AND CONSTITUTING A STIGMA, OF HEREDITARY MENTAL DEGENERACY. A STANDARD OF DEVIATION AND DEFECT.

AND, IN CHAPTER XI,

THE RESULTS OF THE APPLICATION OF THE STANDARD OF DEVIATION AND DEFECT IN COMPARISONS BETWEEN THE GYRES AND FURROWS IN SEVERAL FORMS OF MENTAL DISEASE, AND THOSE IN THE STANDARD GROUP OF CASES.

INTRODUCTORY REMARKS.*

In the deviations from usual form or type already described—both the new and those adopted from other observers—the material is provided for tests or criteria of various forms of defective or aberrant brain development; and the standard about to be described has its material derived from those sources, and is directly drawn from certain brains.

But it is in relation to one great group of mental diseases that these peculiarities of brain architecture are especially valid and enlightening. I refer to the great group of mental diseases which are essentially based in hereditary mental degeneracy, and in which there are more or less the recognised signs of degeneracy of mind and body, in the family or collaterals, in the individual or in the stock from which he springs.

These factors—heredity and degeneracy—of course, do not play an equally important part in all of such forms of

* With little change, these preliminary remarks are taken from part of my Presidential Address, in July, 1895, in the Section of Psychology at the Annual Meeting of the British Medical Association in London. (*British Medical Journal*, Sept. 28, 1895.)

mental disease as are subsumed here. For, throughout this large group of mental affections the somatic and psychic stigmata of degeneracy obtain more or less, but their nature and grade differ much in the several members of it. In points of detail this subject is one of contention; but the broad general fact of the existence of such signs or indications of hereditary mental degeneracy cannot be successfully impugned.

I have therefore endeavoured to frame a composite and sufficiently elastic standard of abnormal superficial brain architecture—that is to say, of configuration of gyres and furrows—to use as a test and criterion both of the existence and of the degree of the degenerate, defective, and aberrant developmental peculiarities found in the brain in the several forms of predominantly hereditary mental disease. It is not drawn from profound idiocy with its prevailing record of pathological disaster or of gross teratological malformation; for there are weighty reasons why such a standard not seldom would be defectively applicable, and even misleading. But it is drawn from cases in which, with more or less of the somatic and psychic signs of hereditary mental degeneracy, there are innately defective and weak mental powers, with mental peculiarities or mental perversions.

Broadly and summarily viewed, it amounts to a somatic indication, a sign-group, or stigma of hereditary mental degeneracy. As such it is valid when applied to the other forms of mental disease constituting the large group already mentioned, inasmuch as each of them—speaking in generals and summary—is found to present a brain configuration differing from this standard one approximately about as much as the form of mental affection itself differs clinically and nosologically from the cases yielding the conformation of brain adopted here as a standard of deviation and defect. And, indeed, while confirming the general accuracy of classification, the application of this standard has solved or confirmed doubts on one or two points on which judgment had previously been held in suspense.

From other of these forms of mental defect and disease a standard might have been taken and used with various degrees of success; the one I have selected seems to be far the best and most useful. This standard is one of mobile applicability and not of cast-iron rigidity, and affords due room for differences, especially in detail. Not every brain

of a particular psychosis of the group concerned presents the same set of features or the same combination of them; just as, clinically, not every case of a given disease presents the same set of symptoms, or every symptom typical and full-blown. And precisely as with other somatic stigmata; such as the deviations from normal manifest in teeth, palate, or skull; so here, the deviation-group is far from being always one and the same; and, moreover, some sets of deviation possess especial value.

The standard adopted here as a criterion of deviation and defect; of departure from more usual form existing in normal persons; is that taken from the brains of patients who were examples of varieties and degrees of imbecility, and of the states most closely allied to it with mental peculiarities or mental perversions. (Congenital, and chiefly developmental, imbecility; original paranoia; analogous cases of similar mental status.)

For clearness, it is necessary to offer a somewhat full summary of the morphological gyral and fissural conditions observed in these brains. A summary of this summary would represent the standard in its most simple form.

GROUP I.

SUMMARY OF BRAIN MORPHOLOGY, AND SKULL STATE, IN THE STANDARD GROUP OF DEVIATIONS AND DEFECTS.

Summary. *Calvaria* often thickened, sometimes osteoporotic generally, or spongy internally, or the inner aspect irregularly roughened and channeled by vascular and dural and pacchionian erosions. On the other hand, occasionally, increased density of calvaria, and lessened of diplöe, occur, either generally or locally. Sometimes the calvaria is hyperostotic internally, manifesting osteophytic flattened irregular growths or ridges. In some, the skull is short and, perhaps, wide, and the hind-head is apt to be short and small, the occipital declivity to be steep. Small heads are frequent; but, on the other hand, the head may be large, wide behind, narrow in front, and in horizontal section presenting the rude outline of a triangle with rounded angles and with its base directed backward.

Inequality in size and weight of cerebral hemispheres occurs in not a few cases; in some being very considerable, in

others less extreme. Variations from the usual limits of *relative size* of some of the cerebral lobes may be found.

Smallness of gyri may mark the brain off very decidedly from the common run of cerebra in this respect.

Irregularity of gyres and of their boundaries and dividers—the furrows—is often very noticeable. And much subdivision of gyri in a more or less irregular way is frequent, inasmuch as unusual furrows and much furrow-branching are frequently observed.

But the condition may be one of very simple gyres and furrows, strongly demarcated and schematic in their simple bold outlines. Unusual furrow-forms mark the irregularity of gyres: whereas bold simple furrows speciously seem to conditionate a correspondingly simple and clear-cut configuration of the gyres.

Cerebral developmental perversions, giving rise to undue extension or branching of sulci, and occasionally to their duplication, partly account for these two states—somewhat contrasting in appearance—and chiefly for the former. And, on the other hand, of vast importance in the production of undue simplicity of architectural detail of the cortex, is defective development of the anastomosing and of the annectant gyrels and gyres.

Coming now to the *Special Lobes, etc.*:—

FRONTAL LOBES (in which the anterior central gyre is taken, in this Chapter).

In this standard group may be good “relative length” of the frontal lobe:—*vis.*, its length measured along the mantle-border, or measured laterally, and compared with the measurements of the corresponding total length of the hemisphere.

Moreover, differences are often observed in the relative size and development of the several *frontal gyres*; as, for example, a broad well-convoluted second and a small third; or the gyres of the same name in the two cerebral hemispheres differ decidedly in respect of their size and of the abundance or paucity of their folds.

In general terms, the frontal gyri may be simple and strongly defined. They may be small; occasionally are divided into numerous small sub-gyral folds. But I have seen them of good, or even of unusually large size; and also have now and then observed a factitious appearance of

greatness due to a broadening out from distension by increased fluid pressure from within. The gyres are often irregular and odd in shape or outline; occasionally are very distinctly separated by bold furrows.

The *sagittal gyres* of the frontal lobe may have a real or specious appearance of being directed upward forward and inward. In some cases they are more or less distinctly arranged in four tiers instead of three, and that more frequently on the right side.

Deep furrows may be ploughed vertically part of the way up the middle of the *central gyres* from the Sylvian fissure. Of these gyres only the anterior one concerns us at the present moment. This gyre may be very irregular. The irregularity is partly related to corresponding conditions of the precentral sulcus group. This sulcus group may be so united as to form a boldly defined, deep, long furrow, free, or nearly so, from bridging. A precentral may enter the Sylvian fissure or the interhemispherical cleft: occasionally it is unusually zigzag.

The *third frontal gyre* is often small or irregular and ill-defined; the second frontal sulcus, perhaps, being irregular or in separate pieces.

One or both of the third frontal gyres may be sunken in parts, as if channeled for the *débouchement*, into the Sylvian fissure, of various sulci which cross the gyre or its foot of insertion; and in some examples there may be several such dividing grooves or channels, of which, occasionally, one or two may be extra and anomalous. They tend to enter the second frontal furrow, above, at about a right angle, and may strike across the second frontal gyrus, or in a more backward direction.

The two *upper frontal gyres* may be cut across by unusual, or unusually developed, sulci; either somewhat perpendicularly, or diagonally upward and forward, across their back part.

A dwarfish condition, with defective development, of the *frontal and parietal opercula* of the Sylvian region is apt to occur in this standard group of cases, and the orbital surface to slope slightly over on to the external frontal aspect. These conditions involve a tendency to exposure of the Insula, the normal submergence of which is thus left incomplete.

On the external frontal aspect, only a single *anterior Sylvian limb* may be apparent. But in some of these cases

the other anterior Sylvian limb is present, but orbitally situate, so that the "cap" lies partly on the orbital surface.

The first frontal sulcus (f_1) may be irregular or radiate. The second (f_2) may be ill-marked; small; in disjunct pieces, e.g., represented by obliquely-set fragments. Or the f_2 may lie *vis-a-vis* the angle of the fronto-marginal sulcus. The incision of the cap may be small: yet it may be erratically elongated.

The horizontal ramus of the *inferior precentral sulcus* may hold on a very sagittal direction. The sulcus may enter the Rolandic or the Sylvian fissure, the latter usually by an intermedium. The precentral sulcus elements may be fused into one furrow running upward and slightly forward and joined by f_1 and f_2 at about a right angle. The intragyral sulci of first and second frontal gyres are apt to be slight or absent.

Anterior mesial surface.

On the mesial aspect we may find the fornicatus small; or the sub-frontal fissure ending opposite to the central fissure; or its upturn bifurcate, and one of the prongs reaching an abnormally forward position.

The upturn of the sub-frontal fissure may fail to reach the upper mantle-border; in such case the middle arc of the sub-frontal may run very obliquely. The arcuate form of the upturn may be reduced to a slight gradual flexure. The relative position of the upturn may differ in the two hemispheres.

The sub-frontal fissure may be joined with the sub-parietal fissure; or it may appear to be duplicated; or to be in several scattered pieces, especially as concerns its anterior portion.

There may be defective development or absence of some of the superorbital sulci; or of the pre-oval sulcus.

SYLVIAN FISSURE.

Its posterior horizontal limb is perhaps extended well back, or sharply up-curved behind, or holding an unusually vertical disposition; sometimes sending up branches which divide the lower part of the central gyres; while into it may debouch continuations from the precentral, postcentral, or central furrows.

A possible or probable representative of the fronto-orbital sulcus of the anthropoid ape may be observed occasionally.

CENTRAL FISSURE (ROLANDO'S).

This is sometimes quite zigzag, occasionally showing some confluence with the Sylvian fissure; or bifurcating above, as if to embrace the upturn of the sub-frontal fissure.

Once it was bridged by an annectant gyre—a rare anomaly. It may be joined more or less by an element of the precentral, or of the postcentral, sulcus system. Occasionally it does not reach as far as the mantle border, in its ascent on the external convexity of the hemisphere: and then the mesial surface, near by, also manifests some decided deviations from usual form. The lower end of the central fissure may not present its usual forward inclination. The fissure may be forked or spurred. Its “relative length” may be shortened.

PARIETAL LOBES (including, here, the posterior central gyre).

Like the anterior, so the posterior central gyre may have its lower part furrowed vertically by an incision from the Sylvian fissure.

A relative smallness of the *supra-marginal gyre* is not infrequent. The inferior parietal lobule may be of defective opercular development. Ofttimes there is great and irregular subdivision of the parietal lobe, and especially of the *inferior parietal lobe*, by forks and branchings of chief sulci; or by unusual furrows. On the whole, the angular gyrus is the one most affected thus, and chiefly by the bifurcation and trifurcation of the first temporal sulcus. But there are others besides this sulcus and its deviations from usual form. For it is not merely that the interparietal sulcus may be very zigzag and eccentric, thus giving occasion to a corresponding gyral irregularity, but parietal convolutions may be affected with other anomalies of the furrows. *E.g.*, the external limb of parieto-occipital fissure may make descent far upon the cerebral convexity; may fork, and thus in part enter parietal gyri, in part occipital.

In this standard-group the *interparietal sulcus* may entirely lack bridging gyres; or being even almost free from sunken gyrels may present the aspect of a relatively deep, simple and bold furrow.

The interparietal sulcus varies much in front, forming in some cases a conjoint stem with the inferior post-central sulcus which may enter the Sylvian fissure: in other cases it is disjunct from the post-central, its anterior end lying well up and back. Its upward and backward sweep may become very irregularly zigzag; or present a bold convexity with upward bulge; or be simple, relatively deep, bold, and devoid of downward spurs. Behind, it is modified by the form of the parieto-occipital fissure's external limb, when this pushes its way laterally but does not break bounds, or when it is unusually short.

It may be cut into by first temporal, by parieto-occipital, or by other named, or by unusual, furrows; or may join the Sylvian. It sometimes fails to make conjunction with the transverse occipital sulcus. The anterior and posterior sagittal portions of the sulcus, perhaps separated by a gyrel, may be set to each other at a right, or slightly obtuse, angle; pointing mesially, open outwards.

The Quadrate Lobule. I have observed the insulation sometimes, and sometimes the peninsulation, of the upper posterior corner of the quadrate by a branch of the parieto-occipital fissure, or by this with a furrow from the upper cerebral aspect. This is fully described and named in the third chapter, and briefly in the first. It seems to have some importance, occurring as it does in close relation to one of the most fundamental and earliest appearing among the fissures; and we have already dealt with the relations of this condition of the quadrate to some foetal states and some occasionally seen in the brain of higher apes.

The irregularities of posterior terminal upturn of the sub-frontal fissure modify the quadrate in some examples; and the furrowing quadratic surface may be unusual and bizarre.

OCCIPITAL LOBES.

The occipital lobes sometimes diverge posteriorly, so that the cerebellum is partly uncovered by them; viewed from above, they do not and cannot conceal it.

The occipital gyres are in some cases small or ill-marked, or few and simple. In fact, the occipital lobes may be small *relatively* to other lobes; their furrows may be irregular and unusual; they may be invaded by branches from the parieto-occipital fissure or first temporal sulcus. The first occipital gyre's annectant part may vary much in shape, being a nearly straight fold if the outer limb of the parieto-occipital

fissure be scarcely developed; or, on the other hand, thrown into widely sweeping sinuosities if that limb be long and forked. Zigzag and far backward extension of the collateral furrow may exist, and is adjusted to correspondent states of the occipital gyres and anfractuosities.

Parieto-occipital fissure. This may be back-set, approaching slightly towards the posterior cerebral pole. Its external limb may be conspicuous; on the contrary, may be short or almost absent; in either case may be bifurcate. If long, it sometimes continues across the interparietal furrow, and courses thence downward on the cerebral declivity; if bifurcate, one prong may enter an unusual furrow connecting with the transverse occipital sulcus, and perhaps may enter a first temporal furrow's branch.

The inner limb's deviations, in general, I have already described in two separate sections of the third chapter. Concerning those, there is to mention here that, in the standard group, bi- or tri-furcation of internal parieto-occipital fissure may occur, or long spurs from it may run fore and aft on quadratic and cuneal surfaces. The external limb of the fissure may be unusually long; it may depress part of the anterior meander of first external parieto-occipital annectant, and enter the interparietal sulcus. Mesially, the fissure may be interrupted by a (normally, sunken,) gyre rising towards the surface and assuming more or less a superficial position; especially is this the gyrus cunei. The internal limb of the fissure may be short, perhaps failing to reach the upper mantle-border; or may be unduly shallow relatively to the depth and boldness of the calcarine fissure.

Cuneus, and Calcarine Fissure.

Often relatively small, the cuneus may also in such case be made irregular in outline by a jagged calcarine fissure. It may differ in size on the two sides. A furrow may cut down from the upper surface of the mantle-edge to, or nearly to, the calcarine; thus to a greater or less extent grooving the cortex of the cuneus vertically. At its apex, the gyrus cunei sometimes tends to, or attains, the surface; in corresponding measure interrupting the internal limb of parieto-occipital fissure and separating it from the "stem." A prong, or a continuation, of the main trunk of the "stem," or of the parieto-occipital fissure, may plough up deeply, into the cuneus. This gives an appearance much as in some

microcephales and some apes. The posterior end of the calcarine may begin unusually far forward; and behind it a small sulcus may curve on the mesial face. This may represent a reversion to ape-like character; and in the latter case perhaps the modifying effect of a posterior cuneo-lingual annectant gyrus rising to the surface. The calcarine fissure is sometimes very zigzag; sometimes deep and bold relatively to the parieto-occipital; and the gyrels usually crossing it may be slight or absent. The "stem" may show some confluence with hippocampal fissure. Into the stem, or into the calcarine, occasionally runs the collateral fissure or a branch of it, representing abnormal persistence of what is a transitory foetal state in some human brains.

The confluence of the *transverse occipital sulcus* with the interparietal may fail: the sulcus may zigzag outward and forward; may be strongly expressed; or it may cut deeply down on the mesial surface.

TEMPORAL LOBES.

In some examples of this standard group there is a deviation from form mentioned in the fifth and first chapters; namely, that in which the first temporal gyre seems to sink into the Sylvian fissure; the first temporal furrow being, as it were, lost in the transverse temporal sulcus, and speciously disappearing; and this is far more apt to occur on the left than right side. The *gyres* are modified correspondently by ill-marked, sectional, states of the first temporal sulcus, or by its sharp upward and forward curve, posteriorly, producing curtailment or invasion of supra-marginal gyre. Unduly vertical transverse trend of its (*t*₁) main trunk may exist; or considerable relative length of its trunk or rami, or their irregularity. When present, defective development of the anastomosing gyres permits of its undue confluence with other furrows; or slightness and even absence of the normal deeply-sunken crossing gyrels conduces to a simplicity and strong definition of the sulcus and bordering gyres. Something of the same, especially a sectional state, applies to the second temporal sulcus.

The *tip* of the temporal lobe may be stunted; the temporal *opercula* may be defectively developed, in fact abortive.

It follows that the *first temporal sulcus* may be very zigzag; may be badly defined; may extend unusually far back; may make unduly sharp curve upward and forward; may fork

much, subdividing the lower parietal gyres considerably and a prong perhaps running close to the transverse occipital sulcus; or may exist in sections only. It may enter the interparietal furrows; a section of it may run into the Sylvian fissure; whilst, behind, it occasionally forks in such wise as to include the larger part of the inferior parietal lobule and part of the occipital lobe between its branches, of which, in such case, the posterior one may zigzag back nearly to the occipital tip.

The *second temporal sulcus*, not seldom, is replaced by several short and somewhat parallel pieces directed obliquely downward and backward. The *temporal incision* (of Schwalbe) may be long and bold.

INFERIOR SURFACE.

On the inferior surface of the cerebrum we may find the occipito-temporal gyres and furrows, especially the lingual and fusiform, very irregular, unusual in shape and relations; very unsymmetrical on the two sides. The collateral fissure may be slightly continuous with the "stem" or the calcarine; may be only defectively formed, or on the other hand may be very long and zigzag, running from the occipital tip nearly to the temporal tip.

Somewhat the same may be said of the orbital and insular gyres; but in some cases these are well formed and not too unsymmetrical.

CHAPTER X.

SUMMARY OF BRAIN-SURFACE MORPHOLOGY IN ANOTHER GROUP FOR PURPOSES OF FUTURE COMPARISON WITH THE STANDARD.

The next step is to select another group of cases, to compare with the above one. From the particular point of view of this enquiry we may divide into three grades the large number of cases which, I take it, are essentially paranoiac.

One is the most extreme and the most essentially the outcome of hereditary mental and physical degeneracy. It is original paranoia, and forms a constituent part of the standard group. Clinically, in the middle grade also the cases are examples of paranoia of degenerates, but are of medium type; whilst in another grade the paranoia is more or less of psycho-neurosal type.

It is this last and mildest grade which will be taken first for comparison with the standard group summarised in the last Chapter. And a summary of its brain-morphology becomes necessary here.

GROUP II.

SUMMARY OF BRAIN FORMS IN PARANOIA OF LAST-NAMED GRADE.

Calvaria. In some thin or of light weight. Of those that are thick, the thickening may be frontal only, or may be general; or a general thickening may be greater in parts; a few that are thick are osteoporotic. Occasionally, the inner surface is eroded by vascular channels, or, again, is osteophytic, or shows undue degree of dural adhesion. The density is in some increased, and if with this the thickness also is markedly enhanced the weight is considerable. Sub-short skull and roundish prominent vertex are seen in some.

Inequality in size and weight of the two cerebral hemispheres is comparatively slight and infrequent.

Frontal gyri. The roots of third frontal gyri, especially the left, are often grooved for superficial confluence of pre-central sulcus and Sylvian fissure, by a usual intermedium. The second frontal gyri may be more or less in two tiers, or the first the same. In some cases, are many secondary gyres on both sides, or on the right chiefly; and they may be very irregularly formed and sometimes, partly at least, by pre-central forkings; and the trend of gyres and furrows may be much obliquely upward and inward. On the right side, the frontal sulci and the tiers of frontal gyres sometimes lack definition and distinctness.

The precentral sulcus-system, by one or other element, is often more or less confluent with the Sylvian, and occasionally with the interhemispherical chasm; occasionally zigzag, or very long, or forked much, and making some conjunction with the first and second frontal sulci and central fissure.

Sylvian Fissure. Occasionally the posterior end of its horizontal part is trifurcate, or presents a sharp up-curve; or the Sylvian is bridged at front of supra-marginalis; or a sulcus diagonalis communicating with it may run high upwards, and may also give a forked appearance to the anterior vertical Sylvian ramus.

Central fissure. Often very zigzag, especially the right; or very irregular; occasionally slightly confluent with Sylvian; or, on the contrary, occasionally only beginning an inch above the Sylvian; or ending short of the upper mantle-border.

Parietal Lobes. Occasionally the posterior central gyre is of irregular shape, or furrowed vertically from the Sylvian fissure, or divided cross-wise into three portions by two shallow sulci. The superior parietal lobule may be divided by oblique or by longitudinal furrows, or be wide and well-convoluted. Occasionally the supra-marginal gyre looks relatively small, the angular relatively large. Occasionally an extra furrow helps to score the surface of the inferior parietal lobule.

Post-central furrows. A post-central sulcus element, or main line, may enter the Sylvian or the interhemispherical cleft. Post-central sulcus branches may incise the posterior central or supra-marginal gyres.

The interparietal furrow sometimes is very irregular or zigzag; in a few is confluent with the parieto-occipital fissure, in a few with the Sylvian (by post-central), occasionally with the inferior occipital sulcus (by an intermedium).

The Quadrate Lobule is sometimes large or much subdivided: occasionally it presents a variety of *præcuneolus*.

The Occipital Lobes in some cases are small or smallish. Their inner tips may be deeply notched. Occasionally, the mesial occipital surface may show five imperfect tiers of straightish longitudinal gyres. The parieto-occipital annectant part of the first occipital gyre may be somewhat sunken.

The *cuneus* may be small, but may be well-convoluted.

The *parieto-occipital fissure's* external limb is often forked, and occasionally trifurcate; sometimes it, or a branch of it, enters the interparietal sulcus; in a few it is strongly stamped on the brain; in a few is very short.

The calcarine fissure is in some slightly confluent with hippocampal fissure; in a few very zigzag.

The transverse occipital sulcus may be short, small, or very crooked.

The inferior occipital sulcus is occasionally boldly pronounced.

TEMPORAL LOBES.

The temporal gyres may be irregular, that is to say one or more of them, and on one side or on both; in some

examples partly made so, and angular in shape, by forkings of the first temporal sulcus.

They may depart from the usual relation of size *inter se*; for example the first and second may be large relatively, the third very small; or the back part of the third may be unusually wide; of the second, narrow.

In some the (left) first temporal gyre and furrow in semblance sink into the Sylvian fissure.

The *first temporal sulcus* in some examples is unduly irregular or zigzag; or running far back. Occasionally it is doubly forked, or divides to surround a cortical islet and reunites; then forks, the upper and anterior prong being in the usual position, the other, by conjunction, running to the occipital tip; or the sulcus is partly replaced by short furrow-pieces directed upward and backward. An unusual furrow may make appearance.

The *second temporal furrow* may run far back towards occipital tip, or near to interparietal sulcus; or the posterior representative of an ill-defined sulcus (t_2) may do so. The sulcus may curve to the inferior cerebral surface; or send a spur into the first temporal sulcus. It may be irregular; or ill-defined; or replaced by several short oblique sulci directed downward and backward.

INFERIOR SURFACE OF CEREBRUM.

The *collateral furrow* may run almost from occipital tip to temporal tip; it may differ decidedly in depth on the two sides.

Islands of *orbital cortex* may be formed by union of surrounding sulci: occasionally the orbital cortex is very unsymmetrical on the two sides. The recti may be short or small.

Occasionally there is congenital malformation of *Cerebellum*.

Having, in the last Chapter, framed a standard of aberrant configurations of gyres and furrows in relation to hereditary mental degeneracy; and having also in this Chapter made a full summary of the gyral architecture in another of the forms of mental disease concerned, we may now proceed to apply the standard by comparing with it this latter summary, and a number of other summaries relating to other forms of mental disease.

CHAPTER XI.

COMPARISONS.

THE RESULTS OF THE APPLICATION OF THE STANDARD OF DEVIATIONS AND DEFECTS IN COMPARISONS BETWEEN THE GYRES AND FURROWS IN SEVERAL FORMS OF MENTAL DISEASE AND THOSE IN THE STANDARD GROUP OF CASES.

The next part of our task, therefore, is to compare the convolucional and fissural states in several members of *the great group* of forms of mental disease, already mentioned in the last chapter, in which hereditary mental degeneracy plays so important a part. And we begin with the comparison between the two forms, summaries of the brain-configuration of which have just been stated; namely, the first or standard form or group, and the second relating to a grade of paranoia. Strictly speaking *sub-groups*, these and others are here styled *groups*, for convenience.

We compare, therefore, in the first place, the cerebral configuration of group "II.," or paranoia of more or less psycho-neurosal type, with that of group "I.," or imbecility and its immediate congeners. And thereafter several other forms, which are constituents of the "great group" referred to, will be compared with the one taken as a standard.

COMPARATIVE DIFFERENCES BETWEEN GROUP "II.," A TYPE OF PARANOIA; AND GROUP "I.," OR THE STANDARD.

In group "II.," as compared with the standard group, "I.," are:—

More often, thin calvaria, or light weight, or both.

Less often, thickening of skull or hyperostosis; *less* often osteophytes, osteoporosis, worm-eaten aspect, and

Less often, small or smallish head, small hind-head or steep occipital declivity, or anomalous skull-shape:—

Inequality of size and weight of a brain's two cerebral hemispheres is *far less* frequent, and rarely very pronounced.

Smallness of gyri;—

Irregularity of gyres and of their boundaries, the fissures;—

Much subdivision of gyres by unusual furrows, or by relatively exaggerated development of usual secondary and tertiary sulci; are all *less* in "II.," than in "I."

In the Frontal gyres, of "II.," are :—

Less often differences in the relative development and size of the several gyres ;

Less often smallness of these gyres ;

Somewhat *less* of all the following conditions, namely,

Extra and unusual furrows cutting more or less high up from the Sylvian ;

Unusual, vertically-placed furrows cutting across, or partly across, the two upper frontal gyres :—

Irregular division by furrows of various kinds.

In Parietal gyres of "II." are :—

Somewhat less of irregular subdivisions of gyres by forking and branching of sulci ; as well as of invasion by furrows passing from upper to mesial aspect, or *vice versâ* :—

The post-central sulcus less often bold and long :—

The interparietal furrow less cut into by the first temporal sulcus, or by anomalous furrows :—

In Occipital lobes, in Group II. :—

More notching of inner side of tip. Less often divergence of occipital lobes, posteriorly, so as to partly uncover the cerebellum :—

Less gyral and fissural irregularity : less invasion by unusual furrows :—

Less often smallness of occipital lobes :—

Less variable form and shape of first external parieto-occipital annectant gyre :—

The cuneus *more seldom* either moulded on an irregular calcarine fissure, or small or quite unequal in size on the two sides, or cut into deeply by a sulcus from the upper surface :—

The parieto-occipital fissure's deviations less frequent or great than in Group I., but similar in kind :—

Occasionally five sub-gyral tiers on mesial occipital surface. (No example in standard Group "I.")

Occasionally the cuneus highly convolute.

The transverse occipital sulcus not becoming extremely pronounced, nor cutting down deeply on cuneal surface ; and rarely failing in its junction with the interparietal sulcus : in these respects differing from the sulcus in the Standard Group.

Temporal Lobes (in Group II.) :—

More notes of departures from the normal relation of size between the several gyres :—

As regards the first temporal sulcus ; less frequent forkings

and irregularities, or long prongs irregularly subdividing the surface:—

The second temporal sulcus more often highly marked, or extending far backward or upward and backward:—

On the Mesial Surface; fewer examples of relatively small fornicatus; of bifurcation of, or of upturn of, sub-frontal fissure; also of forward displacement of it or of its spurs.

On Inferior Surface; the collateral fissure somewhat less affected:—

On the contrary, *much more* of insulation of areas of orbital cortex; and of relative smallness of *recti*; in II., than in the standard, "I."

No very noteworthy difference as regards precentral, central, and Sylvian furrows.

COMPARISON BETWEEN GROUPS III., AND I., THE STANDARD;

Group III. being Paranoia of degenerates of medium or ordinary kind.

In this third group, as compared with the standard first group, are:—

States of calvaria much, on the whole, as in group "II.," except that low type and anomalous shape are somewhat more observable than in "II.;" and, this allowed for, the comparison already made between the skulls of group "II." and "I.," holds good between "III." and "I.," also.

Frontal Lobes of "III.;" as compared with "I.," the standard:—

Somewhat less sub-divisions of gyres by unusual or extra furrow-formation. Rather less irregularity of gyres. Occasionally four or five very distinct tiers, instead of three:—

Precentral sulcus much less often abnormal. Yet it may seem as if starting from Sylvian by separate radii coalescing above:—

Parietal Lobes;—*nearly as much* furrowed and divided, in general, as in "I.;" *more so* as regards the posterior central gyre, both as to perpendicular and horizontal division, as it happens in my cases.

Quadrates somewhat more frequently affected in some respects, especially as to branches from sub-frontal fissure either coursing far into quadrate, or cutting off a part of it. "Præcuneolus"-formation frequent. Quadrate much more often of good size and well convolute, than in I.

The Occipital Lobes in "III.;" as compared with "I.;" present *less* posterior divergence, slightly less furrowing; but *more* of notched tip and of gyral irregularity.

The cuneus much the same as in "I."

The parieto-occipital fissure less frequently deviating from normal range, yet more often cutting into interparietal sulcus; occasionally separated by a narrow fold, only, from the transverse occipital sulcus.

The calcarine fissure in far fewer either zigzag or tending to confluence with hippocampal or with collateral.

On the whole, *the Temporal lobes* are nearly but not quite the same as in "I." The first temporal sulcus, or a spur from it, sometimes enters the interparietal sulcus. Although the second temporal furrow presents in the main much the same kind of alteration as in "I.;" yet in some examples peculiarities exist, as *e.g.*, when the second temporal sulcus, or even the apparent representative of the third temporal sulcus, curves up high and boldly, behind, to the verge of, or into, the interparietal furrow.

The Anterior Mesial surface is, in general, much the same in this group as in "I.;" but the fornicatus is not so often small. There is more forking of sub-frontal fissure over the inner aspect: and a branch of it occasionally invades the upper cerebral surface.

On the *Inferior surface*: very unsymmetrical character of orbital gyres on the two sides: smallness of recti: small and simple insulæ: are conditions each of which is observed in some cases.

No noteworthy differences in Sylvian, central, and post-central furrows.

Passing by an experimental comparison of brains in original paranoia as a tentative fourth group compared with the other elements of the first group; we next take the

COMPARISON BETWEEN GROUPS "V." AND "I." AS TO BRAINS:

Group V. consisting of cases with chronic delusions of somewhat paranoiac type.

In Group V.; as compared with Group I. :—

Calvaria less affected: brain-average somewhat bigger; the proportion of cases with, and the degree of, inequality in size of the two hemispheres, much the same. *Frontal gyres* nearly as much affected on the average: their partial division into four tiers frequent. The *Parietal gyres* present less frequent deviations than in "I.;" but in some examples

there are such departures from usual form as a marked parietal operculum ("reversed occipital operculum," see Chapters I. and V.): or unusual form of supra-marginal gyre, together with a cortical loop from posterior central gyrus; or this last gyrus much cut up by vertical, and other, furrows.

Small, or notched, or furrowed deeply on upper and mesial surfaces, as they sometimes are (in "V."), the *Occipital gyres* are not so often anomalous as in Group I.

Mesial surface not so often noted of aberrant form as in "I."

The *quadrate* and *cuneus*, also the *inferior cerebral surface* generally; affected less often than in "I." (and more approximating to the average of Group "II.").

The sylvian, rolandic, calcarine, parieto-occipital and interparietal furrows have somewhat similar deviations to those in Group "I.," but not so often, and few very striking ones.

On the contrary, the precentral and postcentral furrows approach; much more than the last above-named furrows; to those of the standard Group, "I."

The temporal furrows present somewhat similar deviations to those in Group "I.;" but less often.

COMPARISON BETWEEN GROUPS "VI." AND "I."

In the *sixth* group; which is predominantly *Impulsive*; as compared with the *first*, are:—

Calvaria, less deviating from the ordinary; and much as in "II." :—

Average brain weight greater than in "I.," containing as it does some big brains :—

Inequality in weight of the two hemispheres less; and moderate, only, in frequency and degree :—

The *Frontal lobes*; in extra-tier formation, and in irregularity, approach or reach the standard ("I."); in fissural abnormalities are but slightly less.

The *Parietal gyres* and sulci on external surface, somewhat less often, than in "I.," show irregularities, but these are of similar kind. Once, an islet gyre in anterior part of interparietal furrow's channel. But the quadrate departs much more from average form, especially as to "præcuneolus"-formation. And in some examples the quadrate is much fissured vertically and obliquely.

The *Occipital lobes* in some diverge and uncover part of the cerebellum, or are small or notched.

Deviations of the occipital gyres are less frequent than in "I.," but in a few are extreme and very unusual. The cuneus is but little affected, as a rule.

Similarly, the deviations from usual form of gyres and furrows in the temporal lobes are less frequent than in "I.," yet occasionally are highly marked.

The frequency of confluences with Sylvian is about as much as in "I."

The central, the calcarine, and the parieto-occipital furrows are less affected, on the whole, than in "I.": and the same is true of the interparietal and temporal.

In a few cases the transverse occipital sulcus presents unusual relations with other abnormal or irregular furrows.

COMPARISON BETWEEN GROUPS "VII." AND "I."

In the *seventh* or *Epileptic* group, as compared with the *first* or standard one:—

The calvaria is often very unsymmetrical, anomalous in conformation; as also rest of skull, palate, teeth, *etc.*, in *Epileptics*.

The brains are larger on the average than those of the standard group.

Inequality in right and left hemispherical weight occurs but little in epileptic cases free from permanent paralysis, and free from idiocy.

The *parietal* and *temporal* gyres are, on the whole, *less* affected, than in "I.," the criterion, by great and irregular sub-division and furrowing wrought by unusual extension and branching of furrows. Sometimes they are affected by conditions such as marked forward curve of the posterior upturn of Sylvian or of first temporal furrow.

The long descent, in some, of the external limb of parieto-occipital fissure; and highly marked precentral and post-central furrows, are other points sufficiently striking to deserve special notice.

COMPARISON BETWEEN GROUPS "VIII." AND "I."

In the *eighth*, or *Periodical Insanity*, group, as compared with the *first*, are:—

Calvaria very much less affected:—

No marked inequality of hemispheres; so frequent in "I.":—

Average cerebral weight greater, than in "I.":—

Frontal, *parietal*, *temporal* and *occipital* gyres, as well as

the *anterior mesial surface* and *inferior surface* generally, are less atypical than in "I.;" and, on the average, much as in "II.":—

Formation of "præcuneolus" is frequent:—

Anomalies of interparietal and of (first) temporal furrows are well marked, and approach the standard in some respects. The central fissure occasionally lies relatively more forward than usual.

OTHER COMPARISONS.

Besides the above comparisons of various groups of cases, or forms of mental disease, with the standard one; I have also analysed two other groups for purposes of comparison. But these have been compared between themselves, and therefore not directly, but only indirectly, according to the plan of the preceding comparisons. These groups do not include cases coming under the preceding groups. One (A) consists of cases having, or believed to have, some relation to hereditary mental degeneracy; the other (B) is constituted by cases not known to have such relation, and not likely to have. For convenience these two groups will be called, respectively, "A" and "B."

The results of the comparison are stated here in a very summary way.

Atypical conditions of gyres, and furrows were *more frequent or marked in "A" than in "B" as far as concerns the following, namely:*—

Pre-rolandic portion of the upper cerebral arc shorter than usual in comparison with the post-rolandic portion, in a few examples of "A."

More frequent and more marked deviations in "A" than in "B":—

In Frontal gyri. (But if present in "B" are on much the samelines.)

" Parietal "	"	"	"	"	"	"
" Occipital "	"	"	"	"	"	"
" Temporal "	"	"	"	"	"	"
" Anterior mesial surface	"	"	"	"	"	"
" Quadrate	"	"	"	"	"	"
" Cuneus	"	"	"	"	"	"
" Sylvian fissure.	"	"	"	"	"	"
" Central "	"	"	"	"	"	"
" Transverse occipital furrow	"	"	"	"	"	"
" Interparietal furrow (slightly).	"	"	"	"	"	"
" Precentral furrow (slightly).	"	"	"	"	"	"

Those affecting temporal gyres, anterior mesial surface, and quadrate, are, however, well marked in a few cases of "B."

But, on the contrary, deviations at least as much, perhaps slightly more in "B" than in "A" as regards some points concerning parieto-occipital fissure; postcentral furrows; temporal furrows.

(*To be concluded.*)

Age in Relation to the Treatment of Melancholia. Therapeutical Notes. By J. R. GASQUET and JOHN A. CONES, Medical Officers of St. George's Retreat, Burgess Hill, Sussex.

On looking through some of the numerous observations on the treatment of melancholia by drugs, the most striking point is the diversity of opinion as to their use. This disagreement comes out perhaps most strongly in the case of opium, no doubt because it has been the medicine most widely tried. One leaves the study of the subject with the uncomfortable feeling that the whole drug treatment of melancholia is still quite empirical; for eminent observers press that opium should always be tried in every melancholic, while other no less eminent physicians are equally strong in condemning its use in every case. Our own excuse for adding to the over abundant literature on this subject is that we desire to point out some indication in the use of the two drugs, opium and sulphonal, to which we are convinced that more weight than is generally thought should be given. We have been repeatedly struck by the marvellous effects of opium in some cases of melancholia; and have as often been equally surprised at its utter failure in other cases closely resembling those in which we have been so successful. In hopes of finding some sufficient reason for such apparently contradictory results we have carefully examined the case books of this house for recent years, and have tabulated a sufficient number to warrant, we think, an examination of our conclusions by those who have wider opportunities. To these we have added a few non-asylum cases which we have been able to follow ourselves; which would go towards proving that these two drugs have an action independent of any advantage in any general

TABLE A.—MALES.

Name.	Age.	Treatment.	Duration of Treatment.	Remarks.
Ma.	60	Opium.	3 months.	Slight and irregular improvement, but no permanent change.
Ha. <i>Private.</i>	60	Opium.	3 months.	Marked improvement from first; good recovery.
Ola. <i>Private.</i>	61	Opium.	1 month.	Very striking improvement from first; perfect recovery.
Wh.	59	Opium.	1 month.	No improvement.
Re.	57	Opium.	6 months at intervals.	No improvement.
Br.	57	1st Sulphonal.	2 weeks.	No improvement.
"	"	2nd Opium.	1 month.	Marked improvement from first; complete recovery.
Oh. <i>Private.</i>	50	Opium.	1 month.	Improvement from the beginning; good recovery.
Wo. <i>Private.</i>	52	Opium.	2 months.	Steady improvement from the first; perfect recovery.
Gl.	49	Morphia.	3 months with some intervals.	Noticed usually to be better under the drug than without it; recovery.
Ca.	49	Opium.	3 months.	Slight and irregular changes for better; improved.
Gl.	45	Opium.	2 months.	The patient was made rather more restless.
Jo. <i>Private.</i>	40	Morphia.	1 month.	Improvement from the first; perfect recovery.
McK.	39	Opium.	2 weeks.	Patient decidedly more restless and melancholic.
Ry.	38	1st Opium.	1 month.	Some slight improvement.
"	"	2nd Morphia 12 months later.	6 months.	Steady improvement; good recovery.
Ll.	38	Opium.	1 month at intervals.	No improvement.
Ba.	31	Opium.	7 weeks.	No improvement.
Ro.	28	Opium.	6 months.	No improvement; at times the patient was worse.
Ke.	27	Opium.	2 months.	Gradual improvement; relieved.
Jo.	18	Sulphonal.	5 weeks.	Improvement from first; good recovery.

TABLE B.—FEMALES.

Name.	Age.	Treatment.	Duration of Treatment.	Remarks.
Cl.	69	Sulphonal.	6 weeks.	No improvement.
Ga.	69	Opium.	3 weeks.	Marked improvement during treatment; patient removed by friends as recovered, but soon relapsed.
Du.	68	Sulphonal.	1 year at intervals.	No improvement.
Br.	63	Opium.	7 months, at irregular intervals.	Improvement noted while taking opium, but progress to recovery was slow and irregular.
Ho.	61	Opium.	18 months at irregular intervals.	Some improvement noted when opium given; recovered.
Ppt.	58	Morphia.	1 month.	Slight improvement. Morphia was discontinued on account of obstinate constipation. <i>Relieved.</i>
Pa.	55	Opium.	2 years.	No improvement.
Tw.	54	Sulphonal.	3 months.	Improvement from the first; good recovery.
Fa.	52	Opium.	1 year.	Slight improvement.
Pa.	51	1st Sulphonal.	10 weeks.	No improvement.
"	"	2nd Opium.	1 month.	Marked improvement from first; good recovery.
Ma.	48	Opium.	5 months.	Improvement slight for some time; finally recovery.
De.	48	Opium.	9 months.	Slight improvement, but no progress.
Oh.	45	Sulphonal.	1 year.	Very slow improvement; recovery.
Ma.	44	Morphia.	3 months.	Improvement from first; removal by friends as improved.
McC.	37	Sulphonal.	12 months.	Slight, slow improvement to final recovery.
McCl.	33	Opium.	1 week.	The patient seemed to be more restless while taking opium.
Mo.	31	Sulphonal.	1 month.	Marked improvement from the first; recovery.
Ke.	27	Sulphonal.	5 months.	Improvement from the first.
MaA.	26	Opium and Morphia.	11 weeks.	Seemed to make the patient more excited. She improved and went on to recovery when opium stopped.
Gl.	24	Opium.	2 days.	The patient seemed decidedly more excitedly melancholic and so it was discontinued.
Gle.	23	Opium.	6 months.	There was no improvement; at times the patient was worse during treatment.

asylum here. We do not propose to go fully into each case, as this would be unnecessary waste of space, and our remarks can be readily followed by a glance at the tables. No attempt has been made to classify, to arrange, or to select the cases beyond choosing only those in which opium or sulphonal has been given. One selection indeed we could not avoid. The material on which we have had to work being almost exclusively drawn from the upper and middle classes, it was inevitable that our patients should be drawn from the same classes; but this will probably not invalidate our conclusions.

In considering the usefulness of any particular line of treatment in melancholia, due weight, of course, must be given to the tendency of this disease to recovery in the great majority of cases. But if the administration of any medicine can be shown to be followed in any number of cases by almost immediate or very rapid improvement, it would hardly be thought that this fallacy vitiates to any great extent our conclusions. We have found it hopeless to set down in figures the total duration of the disease, as the statements of relatives are usually so beautifully vague that figures based mainly upon them would be too untrustworthy. We have therefore contented ourselves with stating the duration of treatment. It must be understood, moreover, that treatment was on an average continued for two or three weeks after complete recovery, as a precaution. We will only add that we began the enquiry with perfectly open minds, and with no anticipation of what was to come of it. We may add that the character of the delusion, restlessness or the reverse, suicidal tendencies, refusal of food, constipation, etc., do not seem to afford any indication for or against the use of these two drugs. Taking then the indication suggested by the age of the patient for or against the use of opium, we have come to the conclusion that patients of fifty years of age and over react most strikingly to its employment, and rapidly improve under its use. On the other hand patients of about thirty years of age and under are made notably worse by it. Those between the ages of fifty and thirty react uncertainly to opium; and where such cases do improve the progress towards recovery is much slower than in older patients. It does not appear that the form in which opium is given is of much importance; our preference is for the usual B. P. tincture. The

dose should always be rapidly pushed to the limits of tolerance; and also continued sufficiently long to give it a fair trial.

In looking for a substitute for opium in cases of melancholia in the first half of life, no drug has given us such good results as sulphonal. Given in average doses of thirty grains each night it speedily acts not only by inducing sound and refreshing sleep, but also by what might be called its after effects. It makes a patient rather heavy during the day following its administration. This is an advantage; there seems less mental suffering, and suicidal tendencies and obstinate refusal of food are often relieved. This after-effect of sulphonal must be reached by increasing the dose with caution if necessary, and maintaining it for a few days in the full amount, then gradually reducing it, and only increasing again if there is any threatening of a relapse. It has hitherto been our rule to diminish the frequency of administration, but not the amount of the drug, when the patient seems to be drowsy during the greater part of each day, or when giddiness is complained of, the drug being finally dropped after gradually increasing the intervals between its employment. We have not found it necessary to give a larger quantity than thirty grains; we always begin with this dose, and never give it more frequently than every night. We trust that others whose opportunities are much wider than ours may be induced to consider the point and so either confirm or overthrow the conclusions at which we have arrived; we are only too well aware that these are based upon too small a number of instances for finally deciding the point.

Unfortunately we are unable to supply sufficient details of the body weights of these patients, to include them in the tables. But we are quite satisfied that those patients—the elderly ones—whose mental condition is benefited by opium are also greatly improved in complexion and general well-being. On the other hand those whom opium does not benefit sleep badly under it, and we believe lose flesh.

*Note on the Use of Sulphate of Duboisin.** By J. H. SKREEN,
M.B., Bothwell.

Sulphate of duboisin is a powerful sedative and hypnotic. I have used the drug for some time and administered it both hypodermically and by the mouth, generally in doses varying from grains $\frac{1}{100}$ to $\frac{1}{32}$, though as much as grains $\frac{1}{4}$ has been given at one time. The hypodermic method is the surer and safer, and is followed by fewer bad effects.

Action of a single dose hypodermically administered.—Within 15 to 30 minutes of administration slight temporary aggravation of excitement occurs, the pupils become dilated, and the face flushed. Cardiac action becomes more rapid, accompanied by a full and soft pulse. Speech becomes thick, drawling, and slow, and if the dose be large, inarticulate. Mouth and throat dry, gait ataxic, the general appearance of the patient much resembling alcoholic intoxication.

The excitement rapidly passing off is followed by drowsiness and a feeling of calm, which is followed by sleep, varying in duration from three to ten hours.

There is no recurrence of excitement when the patients are roused from sleep, and the only bad effects are dryness of the throat, and in some cases slight impairment of vision and occasional slight headache. There is no impairment of appetite. This is the general action of a single dose of the drug except in a certain class of cases to be mentioned later.

If given internally there is impairment of the appetite, with a tendency to faintness and vomiting.

Continuous administration is not successful, there is quiescence while the patient is under the influence of the drug. There is weak pulse and tendency to faintness. Marked ataxia is also present. Hallucinations of sight and hearing occurred in some of the cases so treated. Loss of weight sets in rapidly, but is easily recovered from.

Duboisin was used in all cases in which marked excitement was a symptom.

In acute mania its use was not followed by any beneficial results. Single doses, though producing quiet for a time, seemed to cause more excitement after. If continuously administered it induced rest and quietness, but a rapid loss of weight set in, which necessitated the suspension of the drug.

*Read at the Spring Meeting of the Scottish Division of the Medico-Psychological Association.

In delusional mania, only used if required for outbursts of excitement, its action was entirely satisfactory. Excitement which would ordinarily have lasted weeks was cut short. Other sedatives did not have this effect.

In chronic mania its occasional use was followed by satisfactory results.

In general paralysis duboisin was used during violent excitement, both occasionally and continuously, with satisfactory results. On one occasion a congestive seizure followed the exhibition of $\frac{1}{32}$ grain of the drug.

In epilepsy duboisin is not of much use. Its action is uncertain, some cases of epileptic excitement being relieved, while in others the excitement was increased. It does not appear to have any action in altering the frequency of the fits.

In melancholia the worst possible results were obtained. In no single case was there the least relief, while in most the excitement was increased. There was a tendency to syncope, and in some cases hallucinations of sight and hearing were observed.

In dementia, used occasionally, it gave satisfactory results, insuring quietness and rest at night.

Dangers.—If carefully used these are few. Cases of valvular heart disease have received the drug without any bad results. Cardiac failure occurs when continuously administered, especially if given internally, and is due to too large a dose being used. One case (acute mania) in which the drug was pushed suffered from a slight convulsive seizure, characterised by twitchings of the muscles of the face and limbs. Increased excitement occurs in some cases not tolerant of the drug.

Indications for and against its use.—Cases of excitement due to hallucinations and delusions give excellent results. In all forms of chronic insanity with excitement, and in occasional cases of epilepsy, it may be used as a sedative with good results.

It should only be used in physically healthy persons. It should never be used, or only very carefully, in debilitated persons. It is not suited to acute mania, and is distinctly injurious in melancholia.

Duboisin is preferable to hyoscin or hyoscyamine, as the quiescent state established by its use is of longer duration and there is less prostration during or after its use than is the case with these other drugs. The after-effects are

not so marked, and few serious ones occur. Its action is described by some of the worst cases as soothing rather than prostrating, and it does not interfere with the recovery of those treated.

Discussion.

The CHAIRMAN (Dr. Ireland) said that he was not aware how much this drug had been used in Great Britain, but from notes that he had prepared of the professional views in France and Germany he had come to the conclusion that it was good in cases of motor restlessness. It combated extreme restlessness and sudden impulses, but apparently Dr. Skeen had found most benefit in chronic delusional mania. He never got a case in which he could use duboisin. He had sent some of the drug out to his son, who had charge of the asylum at Berbice, but had not received any report as to the results.

Dr. MACPHERSON said this was a comparatively new drug in psychological medicine, and it had been looked at askance by physicians on account of its disagreeable effects. Dr. Skeen had made some of his experiments at Larbert, and he had been thus very much interested. He had taken a small dose himself, and he found the effects most disagreeable. The action of the heart was weakened, its rapidity increased, and there was a feeling of thoracic oppression. He had seen a statement in the *New York Bulletin* that the drug was useful when combined with morphia and that sleep followed its use almost unerringly in the acute cases. He believed that sleep followed the use of duboisin alone in many acute cases, but the disadvantage of giving duboisin in acute cases was the tremendous loss of weight that took place. There seemed to be excessive waste of tissue, and he had seen acute cases lose 2 or 3 lbs. a day. That was a very serious drawback to its use. He could not help comparing the action of thyroid extract in the treatment of insanity with the use of duboisin in that respect. Thyroid, as they all knew, had the effect of reducing the body weight considerably with a recurrence of vitality afterwards, and he thought that there was the same recurrence of vitality after the use of duboisin within two or three days, but it was dangerous to push its use to that extent. Its most valuable effect, as Dr. Skeen had pointed out, was in what was known as systematised delusional insanity. In chronic paranoia, as they knew, great outbreaks of excitement were apt to occur under the persistent hallucinations. There was a time at which the patient seemed to reach the limit of endurability, and to assault people and behave in a disorderly way. He had seen a single administration of duboisin produce quietness for six weeks afterwards, the patient on the day after its administration being well-behaved and apparently in his normal condition. He thought that it was a drug that had to be used with the greatest caution. He still used it in chronic delusional cases, but not for other patients on account of its dangers, which were parallel with those of hyoscyamine.

Dr. SKEEN said that the case that Dr. Macpherson mentioned was a case of delusional insanity. The patient was sometimes violent for six weeks, and after the excitement once commenced the patient was often treated with morphia, hyoscyamine, and other drugs that were used for such cases, but none of these drugs had anything like the effect of duboisin. He had not so many cases to treat now as he used to have at Larbert, but still he found the same good effects in that particular class who were sometimes the most troublesome patients.

Habit, as a Morbid Mental Condition, and its Treatment. By
W. HENRY KESTEVEN, M.R.C.S., L.S.A.

A habit is a voluntary nervous action, which by constant repetition has become automatic. It does not follow that the nervous action has originated in the individual in whom the habit is established. It may have been inherited in its automatic or habitual form.

All nervous action is molecular disturbance in the nervous tissues. Sometimes this is called vibration, but be it what it may, its result as regards the molecules in the nervous tissues is to render them prone to repeat their movement in the same direction when again stimulated, and to afford a line of least resistance to the force which causes their movement. In this way the automatic nervous actions of the sympathetic and cerebro-spinal nerve centres have taken their origin. At some time in the life of the animal or its progenitors they have been purposeful and conscious actions. They have from this passed into what Dr. Scholefield, in his address before the Harveian Society (*Lancet*, Aug. 29, 1896), has called the sub-conscious portion of the mind. Many of them have passed into this territory so deeply as to remain entirely automatic, that is, completely beyond the control of the will. Among these are the metabolic actions of gland cells. Others have not passed so deeply, but are still automatic in their general action, as for example, the contractions of the muscular fibres of the heart and blood vessels. Others again may be said to be partly automatic and partly voluntary—the act of walking, etc.

It would seem then that the life of any individual consists in the formation of habits, and that consequently, by the action of natural selection, that individual, who forms habits more or less beneficial to his existence, will have the better or worse chance of survival—will be the fittest for, or the one having the least claim upon life.

This becomes trite when in a few words it predicates the fact of the existence of good and bad habits in mankind. But these facts have another and a further interest when studied from a mental standpoint, and applied as a means of throwing light upon what is called mental disease.

Now it will be obvious that, although from a purely physiological point of view, habits and their formation may be perfectly normal; when considered psychologically, it is

quite possible for them to be morbid. Nor does this morbidity simply consist in the abnormal physiological conditions, in the pathological changes, to which they give rise. Psychologically, a habit may be in itself a morbid phenomenon. For example, the habit of masturbation, taking its origin in a perfectly normal physiological function, belongs to psychological pathology, both in itself and in its effects. The indulgence may at first be stimulated without the consciousness of the individual. Cases have occurred in which this habit has been caused in infants of two years or even younger by the vicious persistence of mothers and nurses, in exposing the genital organs to the heat of fires by applying over-heated diapers. This at least seems the only possible explanation of such cases as the following:—

A female infant, aged 18 months. Her mother called my attention to her condition one night when she was in her cot. She was then in a copious perspiration, though lightly clad, and the evening was not hot. On my calling the mother's attention to this condition she said it was to show me this that she had sent. The child was then asleep, but the mother said she had only then dropped off; that every day when she was put in her cot she began to rub her genitals with both hands, getting more and more excited and hot. Of course her mother had had to stop her, but if she was not present she always found the child in the condition in which I saw her. The girl was otherwise fairly healthy and well nourished, and with careful watching and being made to lie on her side in the cot, was eventually cured of the habit.

My interpretation of the phenomena was that she had been warmed at the fire in the usual manner, and that her sexual organs had been thus stimulated and her attention drawn to them, and that the *manus ad genitalia* position had thus been caused, with the resulting violent masturbation. This seemed to me to be a very natural physiological result, but that this result was also psychologically morbid there can be no question.

Again, in the case of inebriety, it is difficult to see how this can have originated in any individual except by physiological nervous action, either inherited or excited in the subject by his own voluntary indulgence. This would seem to be almost proved in those cases in which there can be no doubt that the hereditary tendency exists, but in whom that

- tendency has been resisted, and no sign of nervous disease has ever appeared.

In every mental region are to be met with habits of thought which are psychologically morbid. But it is not only the fact of their existence that renders these habits so pernicious. They are, perhaps, more injurious in the results which they produce.

Even the so-called good habits may produce abnormal results, both mental and physical. As in the mechanic, the persistent use of one particular tool will produce distortion of the hand, so in the mind perpetual running of the thoughts in one channel, constant working in one groove, tends to produce mental distortion. All ideas, all thoughts are brought to the same touchstone; all reasoning is coloured by the same shade. As all character is simply a congeries of habits, so the greater or less perfection thereof consists in the greater or less multiplicity of habits. However good a mental habit may be, the more predominant it is the worse are the results on the mind as a whole. When an individual possesses a number of habits the less likely are any one or two of them to be prepotent. We are thus driven to perceive that the less our thoughts tend to become habitual the less likely are they to become preponderant, and our mental powers are the better. Habit, therefore, is not a volitional state which should be cultivated. It should be our endeavour not to allow our thoughts to become crystallised. By not doing so we preserve an open, a healthier state of mind. Especially is this the case in the deeper processes of mental action.

No one will contend that in the earlier processes, those concerned in providing the mental pabulum, there may not be good and useful habits which should be cultivated. Such for instance as well-directed habits of observation, of attention, of enquiry, of experiment, and discrimination, can do no harm. But it is when we pass beyond sensation, perception, and what Romanes would call reception and conception, that an habitual turn of mind becomes injurious. It is in the use of the pabulum, provided by these processes, that we do well to avoid habit.

Persistent use of one particular method of reasoning will do harm. If we use no other form of reasoning than that which has been called mathematical, that is by rigidly excluding all use of the imagination, we do not improve our minds generally. And *vice versâ* by allowing imagination a

too unrestricted play we may, and do, form judgments more or less erroneous. A habit of dwelling too much on one conceived idea and not comparing it with others, again, cannot be beneficial, cannot increase our mental powers. So, again, a habit of looking upon too many aspects or relations of an idea tends to produce a condition of indecision, impairs the power of judgment. Such habits are psychologically abnormal, and therefore diseased. For there is no middle way in psychology; either it is normal psychological action or it is abnormal, either it is healthy or it is diseased.

In this way it is possible that habits may and do bring their possessor within the arbitrarily fixed line which is used to mark off the insane from the sane.

We say "arbitrarily fixed," for there is no possibility of drawing a hard and fast line, and saying, "on this side is sanity and on that madness."

The rough and ready test applied by lawyers in criminal cases, namely, the decision as to the existence of a knowledge of right and wrong, is manifestly inadequate, if not unfair. Downright insanity is quite compatible with such a knowledge; the fact of the existence in all asylums of a system, more or less complete, of rewards and punishments, proves this. It is therefore necessary to seek some more accurate criterion of mental sanity or insanity, and for this purpose it is better to say that when an individual by his actions proves himself to be injurious either to his own well-being or to that of others, he should be considered insane. Of course such a criterion as this makes no distinction between what in common parlance is spoken of as "badness," and what is considered to be "madness."

For the purposes of this paper such a distinction is not required, even if it really exist.

Nor is the standard here suggested, itself free from the condition of arbitrariness. For the personal equation must be considered; the exact point at which to one mind an action becomes injurious in one or the other sense, may not coincide with that of another mind. Especially is this the case on what may be considered as the outer margin of the debatable territory known as the border land.

Such a thing as a perfectly sane mind can, with one exception, never be shown to have existed on this earth any more than a perfectly sound body. Hence, then, the impossibility of drawing any hard and fast line.

But at the same time, if this be borne in mind, there can

be no dispute as to the existence of cases concerning whose insanity all are agreed, using the word as comprehending both badness and madness.

What is here contended is, that among these cases there be some in which the symptoms are caused by lesions in brain, and others in which the symptoms of insanity exist without any such lesion. These are they in which the evidences of insanity are the pernicious habits which constitute the characteristics of those minds.

Some of these habits arise by the voluntary indulgence of the individual himself. Others, again, take their origin in the individual from peculiar nervous conditions which have been inherited. But it does not follow that such should be considered as brain lesions. These conditions, it is true, give rise to or are favourable to the existence of bad habits, but they may be perfectly normal physiologically speaking.

Bad habits, again, may arise not from any indulgence by the individual, but from bad training. The *wrong* is made to appear to them to be the *right*, and hence their habitual actions bring them within the cognisance either of the criminal magistrate or of the alienist.

The same result may be attained not by bad training but by the utter neglect of any training. The animal nature of man left to itself is sure by its exaggeration of animal characteristics to bring its possessor into the use of habits obnoxious to human or civilised ideas of right and wrong.

Habits due to individual indulgence.—Under this category would be included masturbation, inebriety, and other such, which by their animal nature would be met with in cases belonging to the last-named category. These cases are generally sporadic in character, and render their victims unfit for the ordinary social relations.

The man who looks upon every woman who strikes his fancy as fair prey, and who does his best to seduce all such, as surely needs restraint, as the epileptic homicide. The woman who craves for connection with the opposite sex, who has indulged in erotic longings until they have become habitual to her, in the same way is not fit to be at large. Indulgence in feelings of anger and vindictiveness tend to make these subjects more and more habitually prone to outbreaks of these vices. They progressively become unable to control their exhibition, and what to others are mere trifles, in them excite preternatural and fantastic storms of passion.

Exaggeration, again, if indulged in leads to habitual lying, and thus renders the individual socially impracticable and obnoxious. Inattention, slothfulness, contradiction for its own sake, deception, lack of decision, and many other similar mental tendencies habitually practised, serve only to place those in whom they occur further beyond the pale of proper association with their fellow beings.

Habits due to inherited cerebral conditions.—All of the habits enumerated above may take their origin in this way. Among those most generally inherited in this way are inebriety, passionate outbreaks, sexual indulgence, deception, and mental indecision and idleness. Generation after generation may afford examples of the same bad habits as true in their recurrence as peculiarly shaped features. One special characteristic of inherited mental habit is their pertinacity and persistence. They are more deeply rooted than habits arising in the lifetime of the individual.

Habits due to vicious training.—Among these are to be met those which create the class of habitual criminals. In this class children are trained to perverted ideas; these are the Ishmaels with their hands against all men. Drunkenness appears again in this category. Little children are quieted with gin, until the craving is rampant within them. So, also, they are trained to be thieves and murderers. They are imbued with the idea that society in general oppresses and maltreats them, and so, with perverted and falsely called Socialistic views, they become highly finished burglars and dynamitards, as truly insane as the microcephalic idiot. But there are other forms of insane habits which can be traced to vicious training. These habits seem to have an epidemic tendency. Debased forms of religion and of pseudo-religious teachings have led in times past to habitual excesses of all kinds. In more modern times mental habits, injurious to their owners and baleful in their effects on others, can be traced to the teaching of the extreme views of both Calvinists and Ritualists. How many minds have been wrecked by the ideas concerning hell fire and the unpardonable sin, by the prurient teachings at the confessional, and by the false religiosity which has been substituted for the religion of Christ.

Habitual broodings on these subjects have given rise to habits of melancholia and dire mental depression, terminating often in suicide or insane perversion of natural feeling for others.

Habits due to the lack of Training.—Man is not a mere animal, but the better part of his nature requires for its perfection that it should be drawn out or educated. This is only done by creating habits whereby it is prevented from sinking into oblivion, from rusting in its sheath as a blade that is never drawn. When this is not done the animal characteristics only have play. The individual is enslaved to them, and his habits partake of their nature. It will be easily conceived that such purely animal beings are not suited, nay, are positively injurious in their deeds to beings more truly human than themselves. There is not a vice, there is not an evil practice of which they may not be the habitual exponents.

Extreme examples may be figured in the old world legends of wolf children and such like. But specimens not far short of these are to be met with in every rank of society. There may be a veneer of manner, but it is very thin, and a very little scraping lays bare the real brute.

Such are the beings who have no aim in life but to gluttonise, to drink and to gratify their sexual feelings. Such have shocked the world in the persons of the blood-thirsty tyrants of whose deeds history is full, “murderers of fathers and mothers, manslayers, whoremongers and them that defile themselves with mankind.” More often are such the objects of the solicitude of the criminal courts, but they also come into the hands of those who seek to find some means of eradicating the mental mischief which it is their business to treat from a scientific standpoint.

Over and above all these habits which are the more distinctly objective or apparent to others, there are habits to be met with in all the mental processes, which although subjective in their nature, perhaps even unconsciously practised, may, and do by their more remote results, render a man injurious either to himself or his neighbour. Such may be met with in the complicated processes of reasoning.

The preliminary or precursory conditions to this process, whereby its materials are gathered, such as curiosity, attention, care, enquiry, experiment, discrimination, &c., may one or all be habitually misdirected, mismanaged or neglected.

If we take the faculty of attention, what important mischievous results may not arise from its neglect. A mere idea for lack of proper attention may be allowed to take the position of evidence of fact, and this reasoned upon and

judgment formed therefrom would lead to an indefinite amount of injury. Habitual lack of attention thus might vitiate a man's reasoning in nearly every action of life, and it is not difficult to see that this one habit is the actual cause of no inconsiderable amount of objective insanity.

It is by the lack of attention that memory, that so-called "extension of thought in the direction of the past," is so seriously affected, for memory is but the result of the habit of attention. By that habit the molecules of the nervous tissue receive their arrangement, so that on the recurrence of the part stimulation, they present a line of least resistance to the motive power of thought. This is the reason why in old age memory is said to fail. It fails because its physical basis is at that period of life seldom or never thoroughly established. Old people find less and less in what passes around them worth the trouble of their attention, the natural failure of the faculties producing in them what perhaps after all may be a correct view of the affairs of this life, viz., that there is therein very little worth troubling about.

Without attention memory cannot exist. It is this acuity which when well used stores our mind, impresses the facts of life upon our nervous tissues, and thus creates memory. Imperfect attention means imperfect memory. We can experience this fact at will. We may read down page after page and at the end know absolutely nothing of their subject matter. Habitual lack of attention will soon induce an empty-headedness, a mental dulness, passing on into imbecility.

So in the succeeding step, that of reasoning on the material gathered, intuition or sophistry might be habitually substituted for true reasoning, and the resulting judgment, belief, knowledge, or truth would be irremediably hindered and vitiated.

Coming now to the action of volition. Habits of caprice or weakness of will; habits of impulse instead of deliberate predetermination; tergiversation, obstinacy, all can be cultivated, can be indulged in. All result in limpness and want of mental backbone, for even obstinacy is not real strength of will, and all may become so habitual as to amount to real insanity.

As regards the affections and emotions, the same tendency to harden into an habitual form takes place.

Among the more passive emotions that of content often

indicates a sluggish condition of mind, such hebetude as is met with in races long in subjection, or in classes, as in the serf of Russia, or the agricultural of parts of England. In these people long habituation to conditions of life in which they can barely attain to the minimum amount of nutrition on which life can be sustained, has produced a nervous dulness, a hebetude in all the intellectual faculties. They resemble vegetables; such a thing as a healthy discontent or desire for improvement is not met with in them as a class. They are content. The result is that middle age finds them decrepit paupers, a burden to the State, and a disgrace to the race.

Wit and humour, again, though when genuine and spontaneous is harmless enough, when forced and when strained with spiteful object may by such habitual exercise render its exponent unfit for social life, and produces mental injury of a graver kind.

Thus a man who is perpetually punning, who sees a paronomasia in nearly every sentence that he hears or reads, such a man resembles a gold seeker who is content with the grains washed into the bed of a stream, and does not take the trouble to trace the metal to its native reef. The mind originally, perhaps hereditarily, prone to feebleness, in the exercise of this habit enhances its original condition, it is essentially superficial, and passes from mere shallowness to incapacity for work more or less marked.

Wit or humour, when strained and made to serve a spiteful purpose, that is with the intention of wounding another, as in sarcasm, satire, taunting, libelling, sneering, and habitually so practised, becomes quite unbearable to others. The man who thus uses wit, who spares no soul with whom he comes in contact, who with his sharp bitter sayings, witty though they may be, probes the wounds which life inflicts on all, is hated, and his society is shunned. As regards his own mind, such a habit darkens and chills it in the very parts where, like a plant, it needs warmth and light. His sympathy, by which the human mind finds its easiest channel for expansion, vanishes. Pity for others he completely loses. The mind, thus cramped, shrinks in all its dimensions, and its owner becomes an isolated, solitary misanthrope, and in some cases a miser as well.

A perversion of any of the sympathetic or more altruistic emotions or affections, also becomes in some people habitual. When this is concerned with those who naturally should be

the nearest and dearest, and hate, not love, is met with, and that without apparent cause, it can only be looked upon as an insane habit.

Such absolute and causeless perversion, however, of this most natural affection is happily rare, but selfishness and other bad habits often produce indifference where there should be love. This indifference becomes habitual, accentuating the selfishness which first started it; until the individual becomes impossible as a member of the family circle, or of society generally. It is quite true that accompanying this habitual suppression of natural affections, is frequently a similar indifference to all things, and it is quite possible, nay even probable, that the general condition in such cases is more than mere bad habit, and is due to pathological rather than physiological nervous action.

The moral emotions which the consensus of human opinion has established as laudable and obligatory, such, for example, as the sense of duty, may entirely disappear in consequence of habitual neglect, and as this and the sense of right or wrong constitute the main defence against the animal depravity of our nature, their absence, or habitual weakness even, leaves the course clear to the various forms of immorality which beset us.

By habitual disregard to the promptings of duty we are unfitted for practical life, we are insane, we must be restrained. Either we by sins of omission bring ourselves within reach of the criminal law, or acting on impulse unchecked by any attention to what is right or wrong, we commit some insane action which affords the ground for our forcible detention as lunatics.

A weak sense of responsibility is a potent cause of weak-mindedness, and encourages idleness with all its baneful consequences. Such weak sense of responsibility is often met with in young girls, who, though the children of sound parents, nevertheless have this weakness developed in them by the unwise action of parents and friends. Mothers fail to part with a share of the domestic responsibility to their daughters. They keep all the reins in their own hands, and seem unable to let their daughters even share the work. They do everything for them long after the girls are old enough to attend at least to their own wants. And so it happens that after a few years of severe mental strain at school, when they come home only too glad to relax the long-strung bow, they are allowed to go to the opposite

extreme, are even forced into idleness, at a time of life of high critical importance to the health of their minds. Result. They either become parson worshippers, or their thoughts all turn to attracting the opposite sex, this last with not infrequent unfortunate results.

Such shirking of responsibility as is encouraged in religious matters by the Romish and other religious sects of the Church, also has a deteriorating effect upon the mind. Every mental faculty requires robust and energetic exercise. If such exercise is denied to any of our powers, to that extent are our minds stunted. So it emphatically is the case with responsibility. The weaker it is, the stronger grow the destructive and disintegrating habits of lying, sloth, carelessness, and generally atonicity of mental action,

It is in the moral conditions of life that those insane habits which are less subjective than these are met with. Insanity of habits on the moral side of the mind may truly be said to include the objective insane habits which were described in the early part of this paper.

Eccentric or erratic religious emotions when they have become part of the character of the individual frequently bring him under the observation of the alienist physician. When once the idea has entered a man's or a woman's head that he or she has committed the unpardonable sin, it has a tendency to recur and so become habitual. It colours the whole mind with lugubrious tints, it takes all interest out of life, and by its predominance unfits for social duties.

The mental habits which produce such objective insanity as impurity, drunkenness, gluttony, and libertinism, are all instances of what has been called "moral insanity."

At the bottom of all these habits, and of nearly all morbid mental habits, lies egotism. Whether it be the hypochondriac who sees, feels, or hears nothing but "*my* pain," "*my* sin," "*my* despair," or the libertine who is self and nothing else, who recognises not one of the ten commandments, but creates for his own use No. xi., which reads "Look after number one;" whether it be the self-conscious masturbating young man, or the hysterical and erotic girl; with one and all it is exaggeration of the "I" which underlies all their bad habits.

Could we but eliminate this, or in some way anæsthetise it, more than half the battle would be won. This is the real morbid condition. It is this which must be attacked by those who would bring about a mental cure.

There must, however, necessarily be many of such cases which do not come within either the legal definition of insanity or of criminality. But there are also many who are yet more or less impossible or troublesome to their friends and relations. It is with this class that medical men are most often called upon to deal. Are they incurable? Is there any hope that they can be improved? What is to be done with them? These are the questions most demanding an answer, and most pressingly urged by anxious relatives whose lives are rendered unendurable by these vicious habits in some one or more members of their circle.

In answering these questions, it goes without saying that the element of time in the display of the habits is most important. For the longer the habit has been persisted in, the more permanent must be its modifying effect upon the nervous tissues, and in many cases the more deleterious to the general health and nutrition of the entire body. For although the nervous action itself may be perfectly normal, such habits always leave more or less injurious effects.

Disease involving structural change is nearly always induced by them. This in some cases leads to nervous changes, morbid in character, which give rise to permanent nervous disease. In others their effect is so to lower the vitality of the elements of the entire body, as to lay their victims open to the attack of poisonous influences from without; or by their direct action on some particular organ induce therein morbid changes which eventuate in death. Thus the well-known influence of alcohol on nearly all the organs of the body may be cited as an example of the effect of such habits.

Besides giving due consideration to the question of time, or what we call the age of the habit, we must, before attempting a prognosis, ascertain where the particular habit which brings the possessor under our notice is situated. We must also answer the question of its origin. We must find out whether it is idiopathic, whether it has been acquired hereditarily, whether it is due to training, or to the neglect of education.

Now it is manifest that habits which are of long standing, which belong to the more abstruse and advanced mental processes, those which have grown with the growth and strengthened with the strength, must be proportionately more difficult to cure than habits which have been acquired later in life, which concern the more easily accessible or

earlier mental processes, and which have had a shorter duration. It would be wrong to say that any one mental habit, so long as it was only a habit and had not produced organic cerebral change, was incurable. But it may fairly be doubted whether we have yet at our fingers' ends the true and infallible methods to be used in each case.

"Survival of the fittest" if left to itself can and does eradicate habits which originally rendered their possessors fit subjects for treatment, either as criminals or lunatics. But it may take some generations to do this. Take the present inhabitants of Tasmania. We read that they are almost entirely descended from convicts, and yet at the present time they are a law-abiding, respectable, and virtuous race of people, a credit as colonists to the country from which their immediate ancestors were transported.

There is no doubt that the penal laws, wisely administered, are of great value in treating those forms of morbid habit which bring men within their action. Dr. Clay Shaw writes as follows :—

"The logical inference from these considerations (*referring to foregoing remarks*) is that prisons are in reality large and disciplined lunatic asylums, and many prisoners are discharged in a much better state than when they were admitted, because they have been by rest and low diet actually cured of the insane promptings that led to their incarceration—a physical effect due only very partially to the moral corrective they have undergone."

Undoubtedly these agents (low diet and rest) are very instrumental in the cure, but there are other agents, none the less physical because objectively moral. This is the enforced cessation of the morbid habit which led to their incarceration, and the readjustment of the nervous molecules implicated thereby.

Here then we have the real, and one may say the only at present discovered means available for the cure of bad habits.

By the use of these, there should be no form of insanity which is not caused by pathological change in the nervous system which cannot be cured.

Not that we should put all lunatics in prison, but all ought to be so circumstanced that these three remedies—rest, dietary, discipline—can be properly employed or brought to bear upon them. It must, however, be remembered that the principle, the diapason of these means of obtaining harmonious mental action, is *change*. Whether it be rest, diet,

or discipline, it must contain an element, nay a large proportion of it must consist of change. We might almost sum up the entire treatment of these cases in this word, and consider rest, diet, and discipline as variations thereof.

Rest is of the highest importance. The best form of rest is secured by change of surroundings. Altered entourage diverts the thoughts from their well-worn track and weary round, thus giving rest to the nervous system by providing a different mental pabulum.

Nor should the change be only one of locality, though that is of prime importance. Patients should be surrounded by fresh faces, should meet with fresh ideas. The mode of life should be changed.

In fact this radical change, while supplying the required rest, can also be utilised as a part of the discipline which is also one of the means to be used. With patients who are also criminals, with those who have become recognised lunatics, discipline can be readily brought to bear. But with patients not included in either category, that is, not bad enough to be so included, discipline has to be employed *secundum artem*. It is in this form of discipline that change and variety are most useful. Patients of this class cannot be physically coerced. Restraint in these cases has to be slowly and cautiously evolved and insinuated at many points and by the free use of suggestion. In fact the patient should be gently brought to apply this remedy himself, and that without perceiving the deeply veiled compulsion conveyed from without. He should be made to surround himself with a strong hedge composed not of new or enslaving habits, but of a multiplicity of duties and occupations as diverse and distinct from those to which he has been accustomed as possible. The available stock for this purpose is, of course, in a state of civilisation more or less limited. We all live very much alike. Class differences are merely superficial, and as it is difficult for a town-bred man to tell one sheep from another in a flock, so if it were possible to find some point from which we could superficially contemplate the life habits of the human race, we should find it difficult to distinguish not only one man from another, but we may go so far nowadays as to say a man from a woman. But there are differences of habit as there are differences of features, and it is of this fact that we have to take advantage in dealing with people who are the victims of habit.

Very few such are capable of self-cure ; they must most of them receive external aid if their complaint is to be successfully dealt with. It is the nature of the change which is to be brought to bear upon the patient which requires to be carefully determined. For example, we have to do with a clergyman who has become imbued or penetrated with an idea of his own unworthiness. He, from constantly dwelling upon this idea, becomes more and more depressed ; he may even go so far as to contemplate suicide. Every one recognises that change and the consequent rest is what is required. But to secure that change by allowing the man to go a voyage by himself or only accompanied by near relatives, is simply to verify the aphorism of Horace, "*Colum non animum mutant, qui trans mare currunt.*" Such a man is in dire need of outside aid.

Again, proper treatment of these cases cannot be supplied by friends and relatives. Discipline under such circumstances cannot exist. Again, at home among their own people, there is little or no incentive to what, for want of a better term, must be called an effort at better behaviour on the part of the patient.

Among strangers there is always a shrinking from appearing peculiar, and an effort is made to conceal the weakness. It may be that voluntarily this effort is not often repeated ; still, if it has been made only once, it affords a ground on which to start a line of skilful treatment.

Nor is acute excitement of much use in such cases. This readily loses its power of diversion, and very soon palls, especially on men who have led a sedentary life. What is really required is as utter a change as possible, but not of a stimulating character ; it must be a quiet change, a meeting with fresh ideas of a non-obtrusive nature, a gentle diversion of the thoughts. And so it is in all cases of simply morbid mental habits.

But to be successful there must be a proper time allowed for the operation of these means. Of course this must for its duration depend upon the fixity of the habit. But when once a habit has been acquired which renders a man injurious to himself or to his neighbours, such will not be got rid of in a few days, a few weeks, or even a few months.

The shortest time in which a habit which has acquired the force described above, has to the writer's knowledge been permanently obliterated, is six months, and in these cases

the habits were far from being of a serious or deeply-seated nature.

Patients come, or are brought to us for treatment, who think, or their friends think, that they will get well in a few weeks, or a month or two. Such ideas are utterly wrong, and it is practically hopeless *quoad* cure, that in such periods a good result can be achieved.

This sounds a hard verdict, and may, in cases of modest means, seem an almost insurmountable barrier. But which is worse, a few years' pinching, or a lifetime with such an incubus as a relative who is the victim of some such habit as we have above considered?

So important a truth does the writer consider it, that at the risk of monotony he repeats that in cases of insanity in its broad sense, in which the evidence of that insanity consists only of bad habit, and in which there is no evidence of pathological nervous change, there is fair hope that mental integrity may be restored by the application of the proper means, *provided a sufficiency of time for their operation be allowed.*

*Recoveries from Mental Disease.** By J. G. SOUTAR, Barnwood House, Gloucester.

At these meetings we have an opportunity for resolving doubts by discussion, or it may be of only discovering that in confessing an ignorance which is not singular there is no great sacrifice of self-esteem. I am ready to accept either alternative as the result of our consideration of recoveries from mental disease.

The remarks which I have to make this afternoon are not written up to the title with which the secretary of this division has supplied me. A paper on "Recoveries in Asylums" might tempt one into byways where we had better not wander—might lead one into the foolish and futile course of instituting comparisons between the recovery-rates of different asylums. It is as well to avoid comparisons. I am a profound believer in the value of statistics, and I reject the cynical suggestion that they may be made to prove anything or nothing. Figures, however, can be effective only for the purpose for which they are com-

* Read at the Spring Meeting of the South-Western Division of the Medical-Psychological Association.

piled; when misdirected they become but vehicles for the conveying of false impressions.

The recovery-rate, as we all obtain it, shows what in the opinion of the compiler is the percentage of recoveries on admissions in the particular asylum with which he is dealing. That is all we are told. It is a bit of information, but it is, I think, an open question as to whether the information is of any real value. It is very evident that it gives no answer to the really important question, How many of the curable cases have recovered in any given asylum? It does not enable us to decide what residuum of chronic insanity remains as the opprobrium of our ineffective treatment. When we are taught how to procure figures which will give us information on this point, then those who disregard the common warning on this exercise may institute comparisons. Meantime a few puzzling questions remain to be solved. Prognosis must be unerring, and there must be no doubt as to what constitutes a recovery. The knowledge required for this is still, however, in the womb of the future. I think that we may therefore discard the discussion of that part of the subject, and rather for the purposes of correction and instruction submit ourselves to the salutary discipline of a review of our decisions. The result may be somewhat humiliating, but we come to bear the shock with greater equanimity when after repeated reviews of our decisions the fallibility of our judgment can no longer be doubted—even by ourselves.

It is, in my opinion, often a very difficult matter to decide whether a patient has or has not recovered from an attack of insanity. I find on review that I have again and again discharged as "recovered" patients who were not cured, and that I have discharged others as "relieved" who were really well. I do not know how to inevitably avoid such errors, nor am I very hopeful that any, except perhaps those who have had a limited experience of the insane, will undertake to provide us with a definite rule for our guidance. There are, of course, many cases where recovery is so obvious as to leave no room for doubt. Many other cases there are, however, where we have serious misgivings as to what our decision should be. We, for instance, find that a patient, from whom certainly all the grosser manifestations of insanity have passed, is, as his friends describe him, a different man from what he was before his illness. In such a case the often extremely difficult question arises as to whether the

change in mood or manner is indicative of permanent brain-damage, or whether it is merely the sane response of the organism to a terrible experience. Calamity in any guise operates on most of us to the modification of our moods, and it is, I think, only what we may expect to find, that many who have passed through an attack of insanity, with the knowledge of all that that means both in retrospect and prospect, should go back into the world vaguely, perhaps, yet undoubtedly altered men. We know that calamity influences the sane population in different ways. The ideal people become gentle and submissive—they can turn the other cheek to the smiter, others grow reserved, or sullen, or irritable, and some become reckless, and seek to find in gaiety and dissipation the grave of grief. Changes like these are what friends so often describe as having occurred in those who have been discharged from asylums. To me it seems that these are in many cases natural changes—changes compatible with perfect sanity, and not changes which are legitimately the cause of apprehension and dread, for recovery, whatever else it does mean, does not necessarily mean the re-establishing of that mental attitude which was characteristic of the individual before his attack. With the normal brain reaction to the new experience which has been added to the life of the patient we have now to reckon. It is not always easy justly to appreciate it, but it must not be ignored.

It is sometimes claimed as a necessary indication of recovery that the patient should recognise that he has been insane. I find, however, that I have been justified by the after-history of the case in discharging as recovered patients who to the last scouted the notion that they had ever been insane. It is, of course, impossible to penetrate into the minds of patients, and to ascertain their real belief on this or any other matter. They are just as inscrutable as the rest of us, and I have little faith in results obtained by what some call intuition, which is often merely a sonorous synonym for guessing. The fact is that many patients who have lost every trace of their mental disorder, men and women who are reckoned both intelligent and honest, do not admit, nay, even deny, that they have ever been insane; while, on the other hand, some patients who are still manifestly of unsound mind, especially when prematurely clamouring for release, recognise and admit that the necessity arose for sending them to an asylum. I know of no cases where this

recognition of his insanity—he calls it his past insanity—is so complete as in the case of the hopeless alcoholic dement compared with whose condemnation of himself the medical certificates form a mild indictment. I am thus inclined, in considering the question of recovery, to attach but little importance to the patient's admission or denial of his insanity.

Much more difficult questions await our solution when we ask are we justified, and under what circumstances are we justified, in discharging a patient as recovered who still adheres to some false belief which arose during the course of his attack of insanity?

I think that we are justified in looking upon some of these cases as recoveries. The following will illustrate and explain my view. A. B. had an attack of melancholia with delusions of persecution. On the day before he was discharged recovered he said to me, "I am very grateful for all that you have done for me, but I cannot understand why you permitted A"—an attendant—"to so cruelly ill-treat me one day in the garden." He asserted that the attendant had thrown him down in the garden—he showed me the very spot—that he had jumped on him and treated him violently, and that I stood at the porch close by looking on and encouraging the attendant in the assault. I assured him that no such incident had occurred in my presence, and that the attendant—about whose identity he was positive—never had charge of him. The patient replied, "I must, of course, accept your assurance, and try to dismiss from my mind what I frankly tell you seems to me to be the true and vivid recollection of an actual experience." This man soon after his discharge accepted an important public appointment, and he has for some years now performed the duties of his office with great efficiency.

I could quote other instances in which a patient has returned to fill his place and to efficiently discharge his work, all the time harbouring in his mind a false idea, which he did not entertain before his illness. Yet if a patient is well in other respects, if he has lost his depression or excitement, if he has recovered his natural interests and affections, if he is reasonably conformable to social laws, if he has regained his power for sustained and orderly mental effort, I do not think that his merely retaining an opinion or belief which sprung into being as the result of his insanity necessarily militates against his being dis-

charged recovered. If, however, this belief actuates conduct, and that conduct is of such a nature as to be antagonistic to the organised society in which the individual must live, then, of course, he cannot be discharged recovered. We retain, and rightly retain in our asylums, many patients of this type, and they form the comparatively sane elements in our community. In asylums they are safe; outside of asylums they would have the opportunity of translating into action ideas which are inimical to society.

It seems to me that while the belief in a false conception formed at an anterior date may be, often is of no importance, it is essential that the emotional state out of which the false conception arose should no longer exist. Here again, then, and so to speak, by another avenue, I reach the conclusion that recovery does not necessarily mean the re-establishing of the mental attitude which characterised the man before his attack. My belief is that there is to be found in the great majority of those who have passed through the ordeal of an attack of insanity some mental change, subtle and difficult to estimate though it may be. If, however, that change be not of such a nature as to unfit the individual for the society of his fellow-men or for the pursuit of his labours, we may, I hold, rightly discharge him as recovered. We can get no nearer than this to the appreciation of the sanity of anyone. A knowledge of ourselves and of others demands permission for the recognition of an infinite variety of mental constitution within limits only very vaguely defined.

How do recoveries, reckoned in this somewhat latitudinarian, but I do not think altogether unusual way, stand the test of a review? Let us see how far the decision "discharged recovered" has been justified by the subsequent history of the cases.

During the five years 1890-1895 we discharged from this hospital as recovered, 85 cases. I have been able to trace the history, down to the present time, of 73 persons. A careful consideration has led me to classify them as follows:—

I.—Those who soon showed such signs of mental unsoundness as to make it necessary that they should be placed under the care of others, those in fact who had not recovered.

II.—Those who, after leaving the hospital, showed signs of some degree of mental enfeeblement or peculiarity which,

while it did not prevent them from occupying their wonted place in society, rendered them unfit for carrying on with efficiency their usual occupations.

III.—Those who, for at least twelve months after leaving the hospital, showed no signs of mental infirmity to those around them, and were able to fully resume both their place in society and their usual occupations.

In the first class—those who soon showed such signs of mental unsoundness as to make it necessary that they should be placed under the care of others, those in fact who had not recovered—11 out of the 73 persons must be placed. All these persons within a month or two, some within a shorter time, showed undoubted signs of insanity, and although four out of the 11 have been able to live at home it is only because their circumstances are such as to make it possible for them to have the necessary attendance in their own houses. On a review of these cases I have no doubt that we had in several instances to deal merely with that temporary cessation of morbid manifestation which so largely prevails in some forms of mental disease. Other cases were undoubtedly examples of that asylum sanity with which we are all acquainted—those cases in which the routine life of the asylum shelters the patient from the buffetings which outside its walls fall on these unstable brains with disastrous results. These are the patients who, after one or two experiences of this sort, gladly make the asylum their home, thus securing for themselves that possession of their mental faculties which alone makes life worth living.

I shall be interested in another five years to ascertain if as large a proportion of those discharged recovered will then be placed in this class as must be so placed on the present review. I am not very hopeful that the result will be different, for although I now know that my decision was wrong I cannot see what other decision I could have come to at the time. In no case was it possible on discharge to set down any fact indicating insanity. I take it that these cases only disclose to us that not very distant view—the limit of our knowledge.

Class II.—Those who after leaving the hospital showed signs of some degree of mental enfeeblement or peculiarity which, while it did not prevent them from occupying their wonted place in society, rendered them unfit for carrying on with efficiency their usual occupations. In this class 13 of

the 73 persons must be placed. A few probably remain in this class because they are able to maintain themselves in comfort without being compelled to return to the occupations which they pursued before their attack. With necessity spurring them on they might perhaps reach a higher mental plane. These, however, form the minority of the cases. Most of them are incapable through some enduring disability of resuming their place as workers. Here is a typical case. A professional man who had done good, and very energetic work, had an attack of acute melancholia. His depression and delusions passed away. He returned home. He is quite cheerful, rational in his conduct, and keenly interested in everything. He has a desire to resume his work; there are no practical difficulties in the way, there is no loss of knowledge or skill on his part, but he has lost confidence in himself and he cannot be induced to make a start again.

To look upon persons of this type as being still insane is to restrict our view of sanity in an absolutely unwarrantable way. Their persisting peculiarity in mental constitution is within the limits which we daily meet with, and admit amongst the sane population. These then I reckon as recoveries, although not wholly satisfactory.

Class III.—Those who for at least twelve months after leaving the hospital showed no sign of mental infirmity to those around them, and were able to fully resume both their place in society and their usual occupations. Here may be placed 49 of the 73 persons. They have taken the place in the world and at their work which they occupied before their illness. These are satisfactory recoveries. It is true that seven of them have had another attack. Four of these have again completely recovered. One must now go into Class II.; one is still insane and another committed suicide at her home only a few weeks ago. Of the four who have died sane since 1890 it may be that one or more would, had he lived, have had another attack by this time, and certainly on a review of these 49 cases ten years hence it will be found that a considerable number of them have again been insane. This, however, is not the point at present. I have looked at these cases merely for the purpose of ascertaining in the light of their after-history what was the nature and quality of the so-called recovery.

The conclusion is this, that in about 15 per cent. it was not a recovery and ought not to have been so called; in about 17 per cent. the recovery was not wholly satisfactory, thus

leaving about 67 per cent. only of the recoveries in a period of five years to be reckoned as absolute and complete.

From a review of even the few cases with which I have been dealing, there arise many other interesting considerations, but I shall now advert to only one of these. We all value highly as an indication of satisfactory recovery that improvement in the general health of the patient which is indicated by an increase in weight. I find that the average increase in weight between the date of admission and the date of discharge in these 73 persons was just over 12 lbs. In some there was no increase at all, while in others increases ranging from 2 to 88 lbs. were recorded.

I note the fact that amongst those whom I have placed in Class I.—those who had really not recovered—unaccounted for fluctuations in weight occurred in some, in others there was no increase, and in two there was an actual loss of weight between the date of admission and the date of discharge.

This improved condition of our patients which we can weigh and estimate and represent in figures, and which is so intimately associated with their mental improvement, is reached along those lines of general medicine, the practice of which carries us outside the range of specialism in its narrow and restricting and invidious sense. This is not, I know, the opinion of some outside our ranks, to wit—for example—those distinguished physicians who constitute the British Gynæcological Society. It is on record that at a conclave of these gentlemen to whom the iniquity of specialism is particularly abhorrent, it was declared on June 11th, 1896 (*Lancet*, June 27, 1896), by one member, that “he regarded Asylum Medical Officers as the most absolute of the profession, and once a woman was placed in an asylum she was likely to stay there;” by another that “as a rule”—it was kind to make some exceptions—“as a rule no one knew less of the gynæcological conditions of the insane than the medical attendants in asylums.” Why this onslaught on us? Because we are supposed to be ignorant of, what they so learnedly discussed—the psychological consequences of suppressed menstruation. In the treatment of our cases we do not confine our investigations even to this important function. A review of recoveries, a reference to case-books, shows that we recognise the fact that in the great majority of cases the restoration of mental health has followed in the train of persistent efforts to restore the function of some organ other than the brain. In many cases of insanity

we have but a manifestation of a primary disorder in the alimentary tract, or of an abnormal state of blood, of a failure, perhaps a remediable one, in the circulatory system, of defective emunctories, of faulty working in the organs of reproduction. In fact every system must be examined and re-examined with minuteness and care, and all the resource of our art must often be expended in the treatment of organs far removed from, yet directly or indirectly operative on the brain.

There is nothing new in this. In every asylum in the land this is now recognised as the cardinal truth underlying the treatment of insanity. Without this the discipline, the ordered life, the appeals to our patients by pleasing externals, by attempts to arouse dormant interest, by encouragement, by warnings and often by frank explanation—all invaluable aids in treatment—would be of absolutely no avail.

Not the least satisfactory and hopeful conclusion to be drawn from a review of a list of recoveries is that most of them are undeniably the result of definite medical treatment, they are victories of the physician over disease. It is the recognition of this fact which keeps alive amongst us that true medical spirit which, particularly in our work, must ever be less daunted by difficulties than encouraged by success.

Discussion.

The CHAIRMAN (Dr. Maury Deas) said he rose to express their thanks to Dr Soutar for his thoughtful, suggestive, and practical paper, and also as one who had been placed at the head of the meeting to express a few thoughts. There was no doubt that the question of recoveries was one of a very vague and unsatisfactory character as usually dealt with in statistics. But he thought they were to blame themselves to some extent, because it would be rather a good thing if it could be managed strictly without those elaborate statistics, of which Dr. Soutar spoke as one who knows, if the word "recovery" could be eliminated. He did not believe anyone could say that a case was absolutely recovered, or define what recovery is. If one had brought persons to such a condition of improvement, one should be able to say to their friends, "I don't say they are recovered, but they have such mental stability that they are able to face society and the world again." He was rather surprised that Dr. Soutar did not allude to the great importance of the test of discharge. He did not know whether he (the Chairman) was exceptional—he did not suggest he was—but as a matter of fact he had very rarely discharged a patient absolutely. He adopted a system of probation. He thought that if a man could face the rough and tumble experiences of life that was the best test of recovery. He was inclined to think that if Dr. Soutar had adopted some such means as he himself had, that some of the failures to which he had alluded would not have become failures at all. They all knew that insanity had a tendency to relapse. His course, therefore, was to place a patient on probation, and let him understand that he was on probation, to see how far he could stand the turmoil of this world. Then as to another point to which Dr. Soutar alluded, he (the Chairman) thought it was a very difficult thing to say what patients are curable, or what incurable. Of course

there are cases in which there was no difficulty; but he was sure they had all been deceived in regard to cases, some of which they had classed as incurable, but which had recovered, and in others which they had said would recover, but yet had not recovered. The last thing consequently, they should say was that a case was incurable while under care, for even the apparently most hopeless patients sometimes gave them experiences of surprising recoveries.

Dr. PERCY SMITH supposed they would hardly ever eliminate the personal element in cases that recovered. They saw a good many asylum reports in the course of a year, and, no doubt, some cases returned "discharged as recovered," where he should say "relieved." As to patients not recognising that they had been ill, he said that as to such cases when their conduct was normal he generally discharged them as relieved, not as recovered. Alluding to cases of asylum sanity, he mentioned one, of a lady who had been in Bethlem for four years, whose conduct was apparently normal. Yet there was something at fault which made her break down when she was sent out. At last the exigencies of the renewal of the reception orders under the Lunacy Act obliged him to send her out; but in a week's time she was brought back again. He considered this one of the blots in the enactment (hear, hear).

Dr. BENHAM said that in his interesting paper Dr. Soutar did not allude to the time when patients might recover after having been under treatment. He thought that those who were accustomed to large asylums, where they could not give as much attention to patients as they might in smaller ones, knew cases, quite harmless, which had been settled in wards with chronic cases, and in which after a time great amelioration occurred. He considered they kept such cases as these rather longer than was necessary. He mentioned three cases (one of whom was in the asylum for 16 years) which he himself had ultimately discharged, and which were all doing well in life. He contended that such experience made it well for Superintendents to look round their wards and see what they could do in discharging patients fit to go out. He rarely discharged patients on probation; he preferred to keep a patient till he could say that the patient was ready to face the world. With regard to recoveries he did not think the point of epileptics had been touched on that day. They sometimes got better, and it was a serious question whether they should be discharged. He sometimes discharged epileptics, but he always insisted on waiting for a period of one or two months to watch if the case kept well, rather than make a premature discharge. As to the question of increase of weight in patients, recovery could not be estimated by this alone. It was a bad sign if a patient's weight increased without there being some improvement mentally.

Dr. BATTEN, as a general practitioner, said that he wished he had had some of this special experience. He had listened to Dr. Soutar's paper and the discussion following with a great deal of interest, and his feeling was somewhat of pain and sorrow that he could not find in their specialised branch of the profession that amount of hopefulness that characterised the branch he belonged to. He thought he might say for himself and Dr. Oscar Clarke, who was present, that they generally at the first saw whether they considered their cases curable, and that at the end they did send out a very large proportion of them cured. While admitting that there was a large amount of specialism necessary, and that patients ought to have the benefit of this knowledge and skill, he was not sure that the sharp line that came between their branch and his branch of the profession was altogether wise. He trusted that the two branches would be able to bring themselves more closely together. At the present time he was feeling acutely the case of a female patient of his, and he recognised that with the skill and knowledge which the specialists could bring to bear on her case she might have a better chance of recovery, but that this girl would in consequence be labelled all through life as having been in an asylum, he could not help thinking that the day ought to come when their specialism should only be an increased knowledge in the general profession, and that such a case as he had

mentioned would be treated without leaving the stigma of having been in an asylum behind. He should like to see, if possible, all classes of nerve disease have the benefit of the higher skill and better knowledge of the specialists without the cases being labelled as at present. Whether he was too hopeful in thinking that the day would come when the public would recognise this, he did not know, but he thought it ought to come, and speedily too. It seemed to him that the day could only come by inviting, as the Division had done that day, some of the heathens from outside to meetings such as this one, so as to bring about increased and fresh confidences between them for the greater advantage of the public.

Dr. MACDONALD said he had only one or two observations to make. The apparent difference of opinion between their Chairman and Dr. Benham was, he thought, easy of explanation. While he quite agreed with the advantages accruing from discharges on trial, he was not at all sure that this special method was the best to be adopted in connection with County or Borough Asylums. He said that for some considerable time the course adopted at the asylum with which he was connected had been to recommend patients early, and not to discharge them for several weeks after in case of any break down, and he was glad to say that this course of action had so far given most satisfactory results. In the course of the discussion no reference had been made to the serious and great responsibility incurred by Superintendents in recommending patients for discharge before they were thoroughly satisfied as to their return to mental health, and he did not think that they could be too careful in recommending cases for discharge. They were all fully aware of the ready desire on the part of the public to attribute blame to the asylum authorities, and in particular the Superintendent, when an old friend in the capacity of a patient has committed some horrible crime. As Dr. Deas very well knew, he may have no difficulty in sending out cases on trial, because they invariably return to comfortable homes, but alas, it is very different and otherwise with many of the cases discharged from County and Borough Asylums. And unless there should happen to be a charity fund from which recent discharges can be assisted, or unless the asylum authorities have granted an allowance in accordance with the Act, it is not desirable to discharge cases on trial. He had listened with great pleasure to the remarks that had fallen from Dr. Batten, and could assure him that one of the main objects of these divisional meetings is to draw within their membership more of the general body of practitioners, and to remove much of the supposed differences in ways and methods. Would that the general public followed his sound advice and classed them as ordinary medical men, engaged in treating an ordinary disease, but with special advantages and the special methods and means at their disposal.

Dr. ALDRIDGE mentioned two cases which he had discharged on trial, and which had to come back to the asylum. In continuation orders they had often to stretch a point. With regard to what fell from Dr. Batten, he said this was an exceedingly serious consideration. Medical Superintendents were exceedingly anxious to do what they could for outside cases, and they were often appealed to. But their difficulty with patients requiring discipline was that there was no intermediate place to which they could be sent in which they could get treatment similar to that in an asylum without the opprobrium of asylum treatment or certification. Cases of that kind were exceedingly depressing to be consulted about.

Dr. SOUTAR thanked all for the very kind way in which they had received his paper. The criticism had been more appreciatory than depreciatory, and therefore he had not much to reply to. Of course many points of great interest had been raised by the various speakers. It was impossible in a single paper to deal with all of them. The Chairman and others had referred to trial on probation. He omitted to refer to this point, but not because he did not resort to trial probations. In his opinion this was an invaluable test, provided it was certain you could send a patient back to surroundings quite

as good as those he left in an asylum. That was a difficult matter from pauper asylums, but it did not exist amongst private patients. Every now and again cases occurred in which improvement happened up to a certain point and there they stuck, and yet when they were sent home recovery was effected. Many owed their recovery to the fact that they were sent out on trial. He was delighted to hear Dr. Batten—they in this district always were. He did not altogether agree with certain of Dr. Batten's remarks, but he might be mistaken as to the drift of them. The asylum doctors had no desire to be marked out from the general physicians; their desire was to be recognised as general physicians. He thought in his paper he laid considerable stress (thus showing they were not quite so hopeless as considered) on the fact that their recoveries were the victories of the physician over disease. It was, of course, absolutely impossible to treat their patients in their own homes. Until the general public began to recognise that there was no more disgrace in being treated in an asylum than there was to be treated for, say pleurisy, by Dr. Batten in the infirmary, they (the specialists) must continue to do everything they could to break down the feeling now existing. (Applause.)

Housing the Insane. By H. RAYNER, M.D., Lecturer on, and Physician to the Out-Patient Department for, Mental Diseases at St. Thomas's Hospital.

Under the term "Housing the Insane" I wish to bring before you for discussion the various plans that have been adopted of providing for the insane in asylums, colonies, homes, &c., the extent to which they are practicable, the medical supervision they necessitate, together with the size and form of institution which might result from their combination.

The number of lunatics housed in County and Borough Asylums in England and Wales has increased from 15,844 in 1859, to 63,957 in 1896. The increase since 1892 has been 8,448, giving an average of more than two thousand per annum. The housing of these patients in asylums costs from £150 to £250 per head, so that the mere monetary question is one of considerable public interest.

Its importance is recognised by the fact that the London County Council has appointed a Committee to consider the whole question of dealing with the insane, and I think this Association would be neglecting a public duty if it omitted to discuss, and if possible to formulate its opinions on this subject, in regard to which no other body of men in this country can have had equal experience.

The provision of accommodation for the insane has been hitherto too much a question of local expediency, and few counties can be said to have followed the lines of a definite consistent plan, based on skilled forethought. The result has been, it is to be feared, that experiments of a vast and costly character have been undertaken, in regard to the

value of which considerable doubt exists. It is most desirable, therefore, in the interests of the insane and of the community at large, to consider whether some improvement cannot be made on the plan which now obtains of aggregating such vast numbers of lunatics in one building, by adopting plans of segregation in the degrees in which they are respectively useful and practicable.

Mental disease, viewed as a whole, can be divided into groups or classes, each of which demands special conditions for its care and treatment, the numerical proportion of each requiring to be estimated in making any comprehensive scheme for dealing with them as a whole.

The most important group is the acute condition of mental disorder, which requires all, and more than all, of the nursing and medical attention given in a hospital. This may be termed the hospital class.

Next to this is a group in which the mental disorder is still active, the loss of conduct still so great that constant control is necessary. This, for convenience, I would term the asylum class.

The next group would comprise those whose self-control admits of their being employed to a greater or less extent, and of their being trusted with more or less liberty of conduct—the employed or employable class.

Beyond this there is the helpless group, whom, for convenience, we may term the workhouse class, with a terminal group—the infirmary dement.

These classes of necessity shade into one another, individuals passing from one group to another, and the relative proportion of each varying considerably, not only in urban and rural populations, but with the means of care and treatment adopted.

These classes may briefly be said to represent different degrees in the power of control of conduct, and although in all of them, and at all times, careful observation and attention are required in improving physical health by hygienic and therapeutic means, yet skilled moral treatment is equally necessary for the re-education and redevelopment of this power.

Success in treatment is evidenced, indeed, not only in the percentage of absolute recoveries, but by the proportion of those who have improved so far as to be trusted with a great share of liberty.

I am inclined to think that the latter is as great a test of success as the former.

The redevelopment of self-control in the insane is best aided, we shall all agree, by their being afforded constant and repeated opportunities or inducements for exercising it under conditions of observation, in which any abuse of the opportunities given can at once be checked. I believe, too, that we shall all agree that the opposite plan, of keeping the insane cribbed and confined to wards and airing-courts, under rigid and unvarying conditions, is certain to result in uncontrolled, restless, destructive, and dangerous forms of insanity.

In the former plan it is necessary that the conditions of treatment should afford the means of advancing the patient step by step from one stage of self-control to another, and this can only be satisfactorily accomplished by continuous individual attention and direction by skilled supervisors.

A magnificently built and perfectly organised asylum, complete hygiene and diet, numerous and well-trained attendants, are splendid advantages in treating the insane when they have passed the hospital stage, but all these are useless, may be worse than useless, if they are not accompanied by this skilled individual attention and these personal opportunities of progress in self-control.

That *skilled individual attention is the basis of treatment*, should be written in letters of gold in the board-room of every asylum. With this, the poorest structure, the scantiest means, may yield success; without it, the grandest structure and the most lavish expenditure may result in failure, in becoming, indeed, a factory of chronic lunacy of an intractable type.

I do not think it is superfluous to dwell on and emphasise a fact which is so familiar to all alienists, since its familiarity leads to the assumption that others are equally acquainted with it.

I fear, however, that too many members of asylum committees regard the medical functions as beginning and ending with the administration of drugs, or the maintenance of discipline among the attendants, and are consequently inclined to attach little importance to special experience and to set no limit to the power of supervision.

The former view has been demonstrated quite recently by the appointment of non-specialist superintendents, and of the latter I believe that all present have also seen examples or have had personal experience.

Experience in the treatment of insanity is the necessary

antecedent for the acquisition of the necessary skill, but no amount of experience and skill will enable a physician to give the requisite individual attention to more than a certain number of cases.

The amount of individual attention required varies greatly in the different groups, and with the amount of assistance that can be gained from others, without weakening the *responsibility* for results, which alone can bring out the best efforts of the physician.

Individuality of responsibility is the corollary of individuality of attention. It demands that where large numbers of the insane are treated under the general direction of one physician, there should be an absolute delegation of responsibility for treatment, to assistant or deputy physicians, in as many classes as the director cannot undertake. In the largest institutions this delegation should probably extend to all classes, the physician director limiting himself to general supervision and the co-ordination of the various divisions.

The need for such an arrangement is, I think, emphasised if we enter on an estimate of the medical attention needed by the various classes.

Thus, Griesinger estimated that from 60 to 100 acute cases of what I have termed the hospital class, would fully occupy one physician, and I estimate that a physician and two or three assistants would be fully occupied by the care of 200 such cases; in the asylum class probably 300 might be dealt with, and in the other classes still larger numbers.

Various other questions have, however, to be considered before approaching the question of size of asylums.

The association of the sexes in the same asylum is one of these.

The moral advantages and disadvantages of bringing the sexes together are nearly balanced, but probably the advantages are the greater. The mutual deprivation of occupation in some directions is also probably balanced by increase in others. The argument, however, in regard to the restrictions which this association entails on women is much more cogent, but would disappear in great measure if the means of outdoor and other occupation were more liberally provided for the women. I am certainly not as yet prepared to advocate the disassociation of the sexes.

Still more important is the question whether the hospital class should be treated, apart from the asylum and other classes, in a lunatic hospital in large towns.

A lunatic hospital in London, for example, to be efficient, would require such considerable space for airing grounds and isolation from its neighbourhood, that its construction would be very costly, and even then it would do little more than act as a receiving house.

It is indeed not a lunatic hospital that is needed, but receiving houses, or infirmaries, or even special wards in connection with general hospitals, in which cases not yet certified or certifiable could be received for treatment, and from whence if necessary they could be sent to the asylum.

Preventive treatment in the stage that precedes the certifiable condition is, I consider, the great need in dealing with mental diseases at the present day, and I am very strongly of opinion that with adequate provision in this direction a very respectable proportion of cases might be saved from becoming bad enough to need asylum treatment.

Patients in this early stage will come voluntarily, or under the pressure of their friends, to an ordinary hospital, but I am assured that they will not go equally early to a lunatic hospital.

The receiving houses, mental infirmaries or wards, which I wish to see established, should be if possible affiliated with the general hospitals and infirmaries. They should be staffed by alienists, and while obtaining the assistance of the hospital specialists would in return afford opportunities of clinical instruction in early mental disease, which would be most important to the general practitioner.

The establishment of lunatic hospitals for certified lunatics in the centre of large towns, even apart from the extravagant cost, would I consider be antagonistic to this possible advance in preventive treatment and would hence be a retrograde step.

The hospital class indeed should be closely associated with what I have termed the asylum class; the interchanges between the two classes being much too numerous and frequent to warrant the one being in the town and the other in the country.

The importance of rapid and easy transference, from one class to another, similarly necessitates the close association of the asylum class with the early or colony stage of the employable class.

The employable class also gives rise to very important considerations.

How is this class to be dealt with? In Scotland, for

example, we see some twenty-four per cent. of the insane boarded-out in the country; in Berlin boarding-out has been successfully developed in the town; while systems of segregation in farm colonies have been carried out at Gheel for centuries; and in America, Germany and France for many years past. How is it that nothing of the same kind is found to exist in our English system?

These systems are not only practicable but successful, and offer in an especial manner, under proper supervision, the means of redeveloping control of conduct which are so all important. This is especially proved by the Scottish boarding-out system, where it is found that a considerable number of those who have improved thus far, become re-absorbed in the general population.

The Colony system, wherever it has been tried, has been found to reduce the number of those requiring asylum conditions of control to a very small proportion, and thus more than compensates for the cost of land and increase (if any) of supervision. In England, with existing land values, it is an open question whether an estate of one thousand acres or more, with its farm houses, buildings and cottages, would not furnish accommodation for as many patients as could be provided for by the purchase money spent in asylum blocks.

The produce of such an estate should certainly do something to diminish the cost of maintenance; I believe that the economic side of the question would not be found, in practice, any bar to its adoption.

To insure the success of the Colony system, however, especially for the employment of women, it is absolutely necessary that that bugbear of occupation, the fear of competition with free labour, should be got rid of. This is especially necessary in developing such industries as the cultivation, whether in the open or under glass, of market produce, fruit, flowers, etc., in which women especially could be employed.

Probably this objection would be most successfully met by paying the workers,* a plan which I have always believed would do much to stimulate them to exertion and so advance recovery.

Its effect has been tried, and those who have had experience of it are, without exception, enthusiastic in regard to its value.

Boarding-out would seem to be the necessary complement

* A recommendation to this effect has been adopted in the Lunacy Amendment Bill, now before Parliament.

of the Colony system. It has often been said that boarding-out is only practicable in thinly populated districts, with special kinds of land tenure, and so on. I myself was once inclined to this view, but I believe it a wrong view.

In dealing with after-care cases I have had glimpses of the possibility of boarding-out even in our crowded home counties, and I am convinced that I, or any competent person entrusted with the task, could satisfactorily board-out a considerable number of these cases in any one of these counties.

Their supervision, too, should be much more easy and satisfactory than in scattered rural districts, which medical men visit only at intervals or for the special purpose.

Boarding-out in the country I believe, therefore, to be undoubtedly practicable; and if boarding-out in town is practicable in Berlin as it has been found to be, I see no reason why it should not be equally successful in English towns.

The population by area is much denser in Berlin than in any part of London, and the means of supervision are certainly forthcoming to an equal extent in English cities.

The colony system and boarding-out, both in town and country, should, I think, be tried earnestly as means of relieving our growing institutionalism.

The workhouse class also demands separate consideration.

In the London statistics some 33 per cent. of the insane are described as of this class, nor does this include the whole of it, being only that portion confined in imbecile asylums. When we view 140 or 150 of these poor creatures spending their lives together in one ward or room of the big workhouse asylums, we cannot refrain from asking ourselves whether this is the most humane, if even the most economical method of dealing with these poor people. Surely some considerable proportion of them might be retained in, or returned to their own workhouses, where they could be visited by, or perhaps occasionally visit, their friends, and be as well supervised and cared for as in these teeming wards.

If systematic efforts were made some proportion of these also might surely be boarded-out either with relatives or others, and help to keep alive in our general population that feeling of sympathy and responsibility for the helpless which is too much lost under present conditions.

There was a time when the conditions of treatment of these feeble cases in workhouses justified the pressure that was brought to bear for their removal to asylums. The four

shillings a week grant has, however, carried the exodus from workhouses too far, and under existing circumstances the aspect of this question is entirely changed.

Summarising the facts and views which from necessity of time I have only presented briefly and imperfectly, I would conclude that the defects in dealing with the insane in England are still great and grievous.

1stly. The defect in the provision of treatment in the earliest stages of disorder is utter and complete.

2ndly. The defect in dealing with the improved or occupation class is very great indeed.

3rdly. The helpless workhouse class are massed in too great numbers and too much isolated from their friends.

4thly. The responsibility for treatment is not sufficiently and clearly delegated where the insane are treated in large masses.

5thly. The number of medical attendants is too limited. The size of asylums still remains for consideration.

The opinion has often been expressed that an asylum of 400 or 500 patients of all classes was as much as one physician could efficiently supervise, but where we have to provide, for example, for the 17,000 patients of the London county, the practical necessity for dealing with larger asylum units becomes obvious.

If the opinion above quoted is true, then every asylum of more than 500 beds which is under the responsible control of one Superintendent must be inefficient, and the larger the asylum the greater the inefficiency. The considerations I have advanced, however, will, I hope, tend to show that not numbers alone are to be considered, but the means and conditions of treatment.

These conditions, if properly supplied, would admit, I believe, of the satisfactory treatment in one locality of a number of patients, equal to, or even in excess of, our largest existing asylums.

I would suggest, therefore, as a basis of discussion, that where the numbers of the insane under one governing body necessitate it, an establishment under one director should be made up as follows :—A male and female side, each having a hospital for two hundred beds, an asylum division of from three to four hundred beds, with farm or occupation colonies for 500 or more distributed over an estate of at least a thousand acres, and with annexes for

the helpless imbeciles and terminal demented, and that this should be supplemented by a special organisation for developing boarding-out in town and country.

Each of these divisions should be under a physician absolutely responsible for the treatment of the patients under his charge, aided by junior assistants, but supervised by the physician director, who should be the co-ordinating spirit of the whole.

This would mean a very considerable increase in the number of the medical staff, but a considerable diminution of asylum buildings.

The line of advance in the treatment of the insane at the present time may indeed be summarised as a need for *more brains and fewer bricks*.

Discussion.

The PRESIDENT—We are all obliged to Dr. Rayner for bringing before us in this very lucid way his views upon this extremely important subject. He has cleared the ground by bringing before us a practical division of cases. I understand he would like to see an asylum established, say for a certain district, with departments for hospital cases, asylum cases, the employable class, and the hopeless and incurable class. A great many, I have no doubt, would prefer to see those four classes housed separately, the hospital patients dealt with under individualised supervision during the curable time—if there be a curable time. Of course we must admit there is a large number of patients who have no curable time; they are insane as long as they live. That may not be generally accepted, but I believe it to be absolutely true. But to have a lunatic hospital, in the real sense of the word, furnished for a comparatively small number of cases, would perhaps be the cheapest and the best arrangement that the rate-payers could make. Then the question is whether we might not house all the rest practically in one institution. A large number of them might very well, under favourable circumstances, be boarded-out—become members of the general community, under general supervision. When you see, as you do in London, the huge and costly structures that are being erected on all sides by the London County Council for patients of whom a considerable number are hopelessly demented and require to be treated in a much more simple and humane manner, one wonders that the London County Council did not long ago come to the conviction which found expression in the resolution which was adopted that a committee should be appointed to examine the treatment of lunatics in foreign countries, and to advise as to the best means of dealing with the insane population. They have been building these structures out of public funds and upon trade union principles. I believe that no employable insane person was allowed to work on the buildings—work in which he might make some return for the expenditure upon him of public money, and which might conduce to his recovery! Those institutions, erected in that way, certainly seem to me to be a mistake, and therefore I think that this paper of Dr. Rayner's comes very opportunely; it brings the whole question of the housing and treatment of the insane before us very forcibly, and particularly with regard to the housing and treatment of the pauper insane of the metropolis.

Dr. WHITE—As far back as 1884 I published an article in the *Lancet* on Lunacy Law Reform, in which this segregation was advocated—dividing the insane into groups, the curable, who should be treated in a hospital of limited

size, and the incurable, who should be treated on a more economical basis in asylums. That we have not made sufficient advance in our large institutions in recent years is, I think, acknowledged; and there are people—perhaps they are right—who think that this is, to a large extent, owing to the congregation of such vast numbers under one roof. The objection to dividing them into separate institutions has been the extra cost which such a scheme would involve even out of London. But I think that that objection can be very well met by having the hospital and the asylum on one large estate. You then have the advantage of your chronic patients who are largely employable; you have the advantage of those patients who come over to the hospital for day duty and to assist in the menial duties, work in the shops, etc.; and, at the same time, the acute cases to which employment can be partially given, can also be employed for certain portions of the day with the others. The great drawback has been the absence of real scientific treatment. Our staff has been so limited that that has been more or less out of the question. If you separate the two institutions you will then have a large staff proportionate to the number in the hospital, and only a small staff in the asylum. With this large staff, which should consist of at least one assistant medical officer for every hundred patients, you would be able to do more justice to your patients, and be able to get to know them more thoroughly. As Dr. Rayner has said, an up-to-date system ought to be adopted, so that the patients may have the best possible opportunity of recovering. Whether or not this staff should be supplemented by consulting physicians is another question. I am not at all sure but that the introduction of a consultant, not to have control of the patient, but to advise and to consult with the medical officer in charge, would be an advantage. Then again we ought to have a visiting gynecologist. There are so many cases of patients suffering from obscure uterine diseases of which we have a fair knowledge but not sufficient to diagnose correctly. In order to carry out the most difficult surgical operations it might be of advantage to have visiting surgeons. How many of us can say that our patients' teeth are in any way attended to? How many of those patients suffer from neuralgia, consequent upon decayed teeth, and the various forms of indigestion that arise from imperfect dentition? We are careful enough about our patients' bowels; why not about their teeth? I think that in all public institutions there should be a visiting dental surgeon. I believe if we advance upon those lines, and also by establishing chemical and pathological laboratories, we shall advance in the right direction of science, and that very much good will ultimately accrue therefrom.

Dr. THOMSON—I think I am correct in saying that all this was discussed some years ago at Brighton, and then followed that curious enquiry by the London County Council in which they never asked our opinion. I am surprised at a man of Dr. Rayner's ability urging such a scheme. We all have acute and curable wards in our asylums; most Superintendents by their rules are able to consult any physician or surgeon or dental surgeon, and therefore I fail to see any advantage in this idea of a curable hospital either in London or in any great urban centre. If you analyse your admissions, for example, what is the need of this curable hospital that is so much talked about? You have so many paralytics, so many epileptics, so many idiots, and so many senile cases, many of whom are manifestly incurable. I do not say they might not by some at present inconceivable advance in knowledge, be curable, but for all practical purposes they are incurable; you eliminate those cases, and your residuum is acute melancholics and maniacs. These are but a small proportion of your admissions. Any conceivable kind of hospital in which you have nothing but acute melancholics and maniacs would not be by any means suitable or desirable especially in a town. Moreover the great majority of this acute residuum recovers as it is under the present much despised system; they seem to recover on account of, or in spite of the present conditions. Do you not think that the authorities are very much apt to exaggerate these supposed terrible evils of great numbers, and the huge public institutions that are being built? London has increased enormously—

you refer chiefly to London—and—I know the different asylums in London, having served in one—I don't see that for 40 millions of people in England, and five millions in London, that there is such a terrible number of lunatics at the present time. Some five years ago I published a letter embodying the opinion that if the hospitals had to keep incurable cases, as the asylums had, they would rival public-houses in number. I fail to see any cause for alarm in regard to the number of asylums that are arising. If you have an increased population you will have an increased number of lunatics. There has been no great demonstrable increase in insanity. By all means advance in the direction of laboratories. That is, however, quite open to us under the present system. There is no Medical Superintendent that could not embody those ideas in his own asylum. Dr. Rayner tells us there are systems in operation abroad which we have not introduced into England. I don't see that that is an argument, but I am quite willing to enquire into the methods of those systems. I should be very loath indeed, however, to see adopted any system of letting loose lunatic men and women, and thereby increasing the risk of propagating insanity.

Dr. SPENCE—I am inclined to side with the last speaker so far as provincial asylums are concerned. I don't think anybody can have looked round this asylum to-day and have seen the admirable state of cleanliness and efficiency that exists without feeling that there is something to be said with regard to the treatment of the insane in the provinces. I heartily congratulate my old friend Dr. Evan Powell upon the degree of perfection to which he has brought this asylum (hear, hear). I think that everything that can be done for the insane may be done here. Dr. Powell has the opportunity of calling in the best medical skill that Nottingham and its neighbourhood can afford, and I understand that he avails himself of it whenever the necessity arises. While I am not in favour of the huge asylums that are growing up in and around London, I cannot help thinking that where you have asylums for 800 or 900 patients good work is being done.

Dr. MACPHAIL—One of Dr. Rayner's suggestions was that the boarding-out of a certain type of lunatics should be adopted as in Scotland. Is it not the case that a good many years ago this was tried in Sussex and proved a failure?

Dr. NEWINGTON—I wrote to Dr. Saunders on the point and he told me there has been nothing of the kind. Certainly the patients are sent home to their friends very freely, but there is nothing like boarding-out.

Dr. MEECHER—This is a question which concerns this Association in a high degree. Dr. Rayner has a faculty for bringing before this Association subjects of a very interesting nature; but it is scarcely possible in the limited time at our disposal to adequately discuss this subject; we should like to have the opinions of representatives of some of these large asylums. One or two of those gentlemen I am glad to see present, though they have not taken part in the debate. The special application of Dr. Rayner's remarks was to the London Asylums, and I think that any decided opinion given by this Association would carry weight with the London County Council in the matter now being investigated. Therefore I move that this discussion be adjourned until the May meeting, and be then resumed.

Dr. CLAPHAM—I would just like to say a word or two with regard to uncertifiable cases. Dr. Rayner has instituted at St. Thomas's Hospital an out-patients' mental department. Fortified by his example I started a similar department in connection with the Royal Hospital at Sheffield, and I have had very good results. I find that patients come freely for treatment, and the many who would otherwise have gone to the asylum have been kept out, whilst others who would not have gone to the asylum have been sent there in time. I would suggest that in every large town in England a department of this kind should be opened in connection with the hospitals (hear, hear).

Dr. BENHAM—I second the motion that the discussion be adjourned until May.

The motion was then put to the meeting and was lost.

Dr. ALEXANDER said—I am not quite prepared to give expression to my views, as I have to be very guarded in what I say. However, I may say that the superintendence of such very large asylums is most unsatisfactory so far as illness is concerned. It is undoubtedly a case of devolution; and personally, although I have as my colleagues most efficient officers, yet I should like to be able to get in touch with every case—to give as much individual treatment as possible to the various cases. I am rather in favour of lunatic hospitals, some institution intermediate between the parish or the patient's residence and the asylum, and without the appellation of "lunatic asylum." I think the absence of that name would be the means of inducing people to send their friends to this institution more widely than they do to existing institutions. Moreover I think that a good many curable cases would thereby be intercepted. At the same time it would be rather unpleasant for us, because one of the great delights of lunacy life is to see amid so much mental wreckage, evidences of returning reason on the part of our patients (hear, hear). I believe that so far as lunacy is concerned it would be convenient to have this intermediate institution. The proportion of medical officers in colossal asylums is one to 300 patients. That is by no means satisfactory. I honestly admit I should much prefer to have an asylum with not more than 800 patients.

Dr. EVAN POWELL—Having had experience in various asylums in the country, ranging from 300 patients up to 1,500, I may claim to have had the means of coming to some practical conclusion as to which size asylum in my opinion is the best, that is to say the best in the interests of the patients. And I have come to this conclusion unhesitatingly, that any asylum beyond the size to which the Superintendent himself can be in constant touch with every case is a mistake. I think that without much difficulty a Superintendent can carry on the administrative work of an asylum and also make himself thoroughly acquainted with the medical treatment in each case in an asylum of 600 patients. I have two colleagues, one who is in immediate charge of the women, and the other in immediate charge of the men. My practice is to pay a visit to one or other of the two departments every morning. We start at half-past ten o'clock. I go one day, for instance, with Dr. Vincent. We spend an hour and a half with the female patients, and after that visit I make it my duty to go and see the men at their dinner. The next morning I spend an hour and a half in the men's ward, and afterwards go and see the women at dinner. In that way I see the whole of the patients every day. It might be thought that it is a waste of energy to visit the wards in duplicate, but upon the whole I don't think it is a waste of energy. We have a high admission-rate here, something like 160 or 180 a year, and consequently the wards are filled with fresh cases, and every day there is material for discussion between the Superintendent and his assistants. I think it is an advantage both to the Superintendent and to the assistants that they should see the cases every day and consult together as to treatment. Of course I am speaking of a district that is not very thickly populated; but if we come to a place like London, where accommodation has to be provided for 12,000 or 15,000 lunatics, how is it to be done? That is the question. My opinion is that instead of having separate hospitals the best plan is that which now apparently is going to be adopted in the West Riding of Yorkshire, that is to provide a hospital in conjunction with every large asylum. If I had charge of such a hospital I should keep it entirely for the admission of curable cases. Such a hospital would of course be equipped with a proper staff. I do think this is a step in the right direction—a hospital for 200 or 300 patients attached to every large asylum.

Dr. KAY—With regard to the West Riding I may say they have started with a hospital such as has been referred to, at Wakefield. It is designed to accommodate about 250 patients. Whether the scheme will be extended to other asylums in the West Riding I am not so sure; in fact I think it will not be. The money to be spent—£8,000 for 200 beds—at Wakefield is enormous. The question has arisen very acutely from a financial point of view. With

regard to Dr. Rayner's paper, the difficulty to me has always been to know exactly what it means. Every asylum is separated as far as possible into specific departments, though of course they are blocked together. We have acute wards and feeble wards, and the only thing is they are all part of the same block of buildings. Certainly I like the idea of having the acute cases under one's care. Of course when one has a large number of patients one cannot very well know each individual, although I practically see every patient daily. The medical officers are capable of treating these cases—we considered ourselves competent before we were promoted—and if they do want a consultation they can consult with their Superintendent. Upon the whole I should like to understand Dr. Rayner's scheme a little more. I am in favour of acute hospitals, but the difficulty is the material we have to work upon. At the present time the difficulty is as to what kind of cases we are going to put into these different places. Reverting to the West Riding, this question of an acute hospital has been very much discussed, and the Council actually passed a resolution that it should be done in three asylums. It is now going on at Wakefield, but if it is to go on in the other two places I am doubtful, until Wakefield shows good results.

Dr. T. W. McDOWALL—The question of asylums has been settled by our own society. Some years ago we went elaborately into that subject and we drew up a memorandum which was circulated throughout England, Ireland, and Scotland. I was one of the few Superintendents who thought it worth his while to bring that memorandum before his committee, and I printed it as an appendix to my report for that year. With regard to the acute hospital, in this matter I am a thorough infidel. We all have hospitals in our asylums, and we do our very best with the acute cases; and if gentlemen who are building acute hospitals can tell me in what way they expect to benefit acute cases apart from the methods which we employ in our acute wards, I shall be obliged to them. Will some gentleman tell us how it is to be conducted? Is it to be experimental, and what are we going to do with the patients when we have got them in these acute hospitals? If the ideas appear to be promising, instead of being an unbeliever I shall be a very enthusiastic supporter of the movement. But so far as I have seen and heard the promise is nothing beyond what we are trying to do ourselves in the acute cases in the wards of our asylums where those cases are taken.

Dr. RAYNER in reply said—I am afraid I must have made myself misunderstood, because one gentleman apparently thought I wished to inaugurate a hospital apart from the asylum entirely. I certainly expressed my opinion strongly against that. The question of a hospital in the city was discussed by the Association some years ago, and nobody more fully condemned it than I did on that occasion. I said I thought that the establishment of a lunatic hospital in a big town was a retrograde step. Again I had no intention of condemning small asylums. I myself quite agree with the opinion that a small asylum, of 500 or 600 patients, is the beau ideal of an asylum. The question is how to deal with these enormous numbers of patients. Five hundred patients to an asylum means 34 asylums for London, and that does not seem a practical thing. The question I wished to raise was how to deal with these huge numbers. Well, I think if you have to deal with them you must make special provisions, and just as you delegate to your assistant medical officers in your small asylums certain departments to look after, so in these bigger units of lunacy I should delegate the responsibility also, but with a little more complete and definite recognition than now obtains. In a huge institution of the kind I am contemplating, the position of the medical men who have to look after the divisions would be enhanced by being recognised and by having responsibility delegated to them, and I do not think that the position of the director in general would be lessened by their position being improved.

The Asylum Trained and Certificated Nurses of the Medico-Psychological Association. By T. OUTTERSON WOOD, M.D., F.R.C.P.Edin., M.R.C.P.Lond.

The fact that the Medico-Psychological Association has now upon its register upwards of 2,400 nurses, including both sexes, who hold the certificate of the Association "*for proficiency in nursing*," renders it unnecessary to offer any apology to this meeting for bringing before it the question of considering the position in which we now stand with regard to our nurses and to the public.

When the subject of the systematic training and qualification of asylum trained nurses was discussed some years ago, and the matter was put into shape, although we were sanguine of the success of the scheme, we could scarcely have realised at that time all the results that would follow the successful inauguration of a uniform curriculum of training and high standard of examination for our nurses. Now we find we are face to face with an unequivocal success, and by the force of circumstances we are bound to act up to the responsibilities of the position in which we stand, that of being one of the most important, if not the most important, of the nursing authorities of this kingdom, an authority with which the nursing community will have to reckon, and which it is our duty to maintain.

I doubt if any nursing institution can boast of such a position as we hold. Among the many nursing societies there is not one, so far as I am aware, which acts as the qualifying Board for nurses trained and taught in so large a number of nursing centres as we do, nor which can show so numerous a body of trained and qualified nurses holding a "certificate for proficiency in nursing" of such weight as ours.

In the Asylums and Hospitals for Mental Diseases of Great Britain and Ireland there are roughly speaking 128,000 patients of all classes, and if we calculate only one nurse to every 20 patients it gives us a body of upwards of 6,000 persons engaged in the care and nursing of the insane. It is a gratifying fact that although our system of training and education has not yet been ten years in operation we have already one-third of that number who have had the ability and intelligence to train for and pass the stringent examination for our certificate. This has been in a great

measure due to the loyalty with which Asylum Medical Superintendents and medical officers have seconded the efforts of our pioneers in asylum administration, and their earnest recognition of the hospital principle in its truest and best sense as being the basis of successful treatment among our sick and insane patients.

It has been to me a matter of regret that the good work the Association has been doing in encouraging and carrying out the training and education of mental nurses, should by the force of circumstances have been, as it were, done in the dark, so far as the public is concerned; indeed, the ignorance displayed outside our Association with regard to the methods of treatment, care, and nursing we adopt for our patients is lamentable. It is with the hope that a little ventilation of the subject, not only on such an occasion as this, but upon every available opportunity when bodies of medical men are brought together outside our specialty, will result in the position of the Association with regard to its nurses being better understood and appreciated, that I have been induced to place the subject before you to-day for your consideration. It would be well for us to enquire: 1st. What is the present position our mental nurses hold among nurses generally? 2nd. What steps can we take to improve their status? And, 3rd. What is our position as the qualifying body for these nurses in relation to the public?

1st. As to the position our nurses now hold among nurses generally. Owing to the utter want of knowledge on the part of other nursing institutions as to the work, training, and qualification of our nurses, until very recently they have had no status, and no recognition whatever. They were looked upon as a body of rough, uncouth persons, devoid of education; ignorant of the very elements of sick nursing, and possessing but one quality worthy of mention, viz., courage to tackle a violent lunatic. I heard myself this opinion expressed when the question was discussed at a meeting of those who may be looked upon as authorities possessing special knowledge of sick nursing, many of them heads of large, important and influential nursing institutions. With the object of obtaining for the asylum trained nurses a recognised place in the nursing world, and of bringing them more into line with their hospital trained sisters, in July last I laid a proposal before the General Council of the Royal British Nurses' Association, of which I am a

member, suggesting that mental nurses who had had three years' asylum training, who held the certificate of our Association "for proficiency in nursing," and who could bring testimonials of good moral character, should be admitted members of the Royal British Nurses' Association, that they should be admitted as mental nurses, that is, as a distinct class, with a separate department in the published register of that Association. A Committee was appointed, consisting of Her Royal Highness Princess Christian, who is the President of the Association, and the Honorary Officers, with Sir James Crichton-Browne and myself, to consider and report upon the question, and in October a report strongly in favour of the proposal was laid before the Council and unanimously adopted. Immediately a violent opposition to this excellent scheme was started in the columns of one of the nursing journals, and a series of articles and letters, based upon ignorance, misrepresentation, and trades' union principles, forthwith appeared in that paper. No effort was spared to make it appear that an attempt was being made to force untrained lunatic asylum attendants upon the register of the Royal British Nurses' Association, and to prove that if this were done they would take the bread out of the mouths of the hospital trained nurses, and that their admission would degrade the register because they were not trained nurses at all.

It is needless to say such evident partisanship defeated its own object. It raised on all sides the question, what qualifications do these mental nurses really possess, and what has been their training? An opportunity was thus afforded of answering these questions fully in the medical Press and in the representative nursing journals, and in spite of the efforts of a few prejudiced persons anxious to pose as the sole leaders of light and learning in the nursing world, the facts became more widely known, and our asylum trained nurses have at last had their training, education, and qualifications recognised by many nursing authorities, who, in the first instance, through want of knowledge, had refused to allow them any status whatever. It is now admitted by many competent authorities that no nursing curriculum is more uniform or more practical, and no standard of examination is higher than ours.

2nd. What steps can we take to improve the status of our asylum trained and certificated mental nurses?

I have mentioned that a Committee of the General Council

of the Royal British Nurses' Association was appointed to consider and report upon their admission, under certain conditions, as members of that Association. On the report of the Committee being adopted, Her Royal Highness the President was empowered to confer with Medical Superintendents of Asylums upon the subject, and I ventured to suggest that as the Council of the Medico-Psychological Association was their representative body, an application should be made to it, asking for a Committee to confer with the Committee of the Royal British Nurses' Association. The application was made, and a Committee consisting of Drs. Newington, Nicolson, Savage, Spence, and White was appointed. A Conference was held, at which Her Royal Highness presided, and the proposals of the Committee of the Royal British Nurses' Association were explained. Both Committees still exist, and I trust ere long we shall be in the position to have the result of their deliberations laid before this Association. My own view is that if we can have our asylum trained nurses affiliated with a large General Nursing Association, such as the Royal British Nurses' Association, as a distinct class, and in no way clashing with the interests of the hospital trained nurses, but still as a branch of the nursing service, we shall obtain for them a position among nurses to which by their training and qualification they are fully entitled. As regards improving their status in asylums there can be no doubt the possession of our certificate gives them a standing of which they are justly proud, and I am glad to hear that asylum authorities are also recognising its value by giving increased pay to those who hold it. I also understand it is becoming the rule in many asylums to regard it as a necessary qualification for the post of "charge nurse," and it is most desirable it should be, for the position our certificated mental nurses will ultimately hold will in a great measure depend upon the position we ourselves give them.

3rd. What is our position as the qualifying body for mental nurses, in relation to the public?

Up to the present time the knowledge the public and the medical profession generally have had with regard to the class of persons called mental nurses has been to a great extent obtained from those engaged in private nursing, either on their own account or attached to various nursing institutions, and as many of them were inadequately trained, or not specially trained at all, or their only knowledge of

mental nursing had probably been obtained by a few weeks' residence in the wards of an asylum from which they had been dismissed for incompetence or some other cause, we can readily understand the public estimate of the mental nurse has not been a high one.

Those who like myself have to deal with the care and treatment of mental cases in private practice know only too well the difficulty of obtaining trained and qualified nurses for our patients. We, therefore, look to this Association to continue to further and encourage in every way the training, education, and qualification of mental nurses so that this urgent and growing public want may be supplied. It is the only authority to which the public can appeal. There is no other. Mental nurses must be asylum trained.

The success of our scheme of systematised training and qualification having placed us in a position to improve the status of our nurses serving in asylums, we should still further increase our sphere of usefulness by assisting as far as possible to raise the position of those who leave the service of asylums to enter upon private nursing and take their place in the great nursing world beyond.

To this end the possession of our certificate "*for proficiency in nursing*" will be of the greatest service, as under the conditions I have mentioned it would enable them to join such a Society as the Royal British Nurses' Association should the proposal for their admission be carried, and I would earnestly beg this Association to favourably consider the admission of our asylum trained and certificated nurses as members of the Royal British Nurses' Association as a distinct class and in a separate department of its register to distinguish them from those who are hospital trained.

In supporting this proposal we shall be doing an act of justice to our nurses, and at the same time conferring a boon upon the public by affording them the means of ascertaining whether the nurses they employ are properly trained and qualified or not.

In this brief paper I have merely touched the fringe of what is a large and important subject, but the limit of time compels me to make it as condensed as possible.

CLINICAL NOTES AND CASES.

Craniectomy for Idiocy, with Notes of a Case. By T. TELFORD-SMITH, M.A., M.D., Medical Superintendent, Royal Albert Asylum, Lancaster.

The boy R. H., of whose case I here give some brief notes, has recently (17th March, 1897) been admitted to the Royal Albert Asylum, and so has not yet received any special or systematic training; but, as it is now approaching two years since he underwent surgical treatment in the form of linear craniectomy for his mental defect, it seems worth while to record any changes in his mental and physical condition which have taken place since the operation, as we can thus, to some extent, arrive at an estimate of the degree of improvement more or less directly due to the surgical procedure. The boy has, however, both before and since the operation, had attentive care and ordinary home training under his parents' supervision. I may here mention that the fact of the boy's being operated on came about through the parents having read a tale in *The Strand Magazine* called "Creating a Mind"—a tale which I fear has given rise to exaggerated hopes in the minds of the parents of many idiot children.

The boy R. H. was born 31st May, 1889, and is the second-born child. The first-born child is still living, and is normal in physical and mental condition.

The parents are healthy; the father's present age is 45, the mother's 42.

The mother is not robust, and is inclined to be emotional; she had been a schoolmistress before marriage.

The father is a strong, active man.

In mental capacity the father and mother are above the average, and both parents have been teetotalers for life.

R. H. was born at full time; his parents say that he was "hurt at birth with the instruments," but, from what I can gather from the father, they rather assign this cause in the absence of any other more tangible one. The boy was delivered with instruments, but the labour had been a protracted one, and the patient was asphyxiated when born, so that probably there was some injury to the brain tissue, during labour, owing to venous congestion and effusion, with, perhaps, a small amount of meningeal hæmorrhage, as a result of the prolonged pressure in the genital canal—a condition which the timely use of the forceps often relieves or prevents, but which, unfortunately, is frequently attributed, afterwards, to instrumental delivery.

* "Stories from the Diary of a Doctor." By L. T. Meade and Clifford Halifax, M.D. *The Strand Magazine*, January, 1895.

Up to the age of about three years the patient's mental deficiency was largely a matter of conjecture. At about two years walking began to be attempted, but speech has never manifested itself, and up to the present the patient does not articulate.

His senses of sight and hearing seem normal, and, as far as can be ascertained, his senses of smell, touch, and taste are not deficient.

There are no signs of any paralysis, the limbs are in perfect use, and the patient can walk and run unaided. He can use his hands sufficiently to feed himself with a spoon, but he cannot dress himself. His habits are faulty; he is occasionally wet and dirty. In manner he is rather restless, and inclined to be fretful, but he has a fair amount of curiosity, although little power of fixing his attention. He has rather a comely face, with well-formed features; eyes, ears, nose, and mouth are normal in shape and size. Palate considerably higher than normal. Teeth well placed and sound; slight tendency to dribble. Skin healthy, although rather pale.

I have no record of the boy's head measurements taken before he was operated on, but, judging from his present measurements, I think the case could hardly be classed as one of microcephalus; from the history of the patient I think we might more correctly describe it as a case of traumatic idiocy, the traumatism being due to prolonged labour and asphyxia at birth. Judging from the boy's rather saddle-shaped palate, and from his mother's somewhat emotional nature, there may be superadded a slight congenital tendency to mental feebleness.

April, 1897.				Head Measurements, R. H., in inches.
Circumference	...	...	...	19½
Transverse (a)	...	...	...	12½
" (b)	...	...	...	4½
Longitudinal (c)	...	...	...	12½
" (d)	...	...	...	6½
Width of Forehead	...	...	...	4½

Circumference taken above ears and over occipital tuberosity.

Transverse (a).—Tape measure from ear to ear over vertex.

" (b).—Calliper

Longitudinal (c).—Tape measure from nasal notch to occipital tuberosity.

" (d).—Calliper

Width of forehead between external angular processes of frontal. Shape of head: Brachycephalic. Cephalic index: 82.

Measurements, R. H.			
Date.	Age.	Height.	Weight.
		Inches.	lbs.
April, 1897.	8 years.	42½	45

Mr. Edward Cotterell performed the operation of linear craniectomy in three sections, removing portions of the cranium on August 13th, August 27th, and September 12th, 1895. The boy recovered quickly and well from each operation.

As to the result, so far, of the operations (20 months after) the parents assert that they can see no actual mental change, that is to say, no increase in the child's intelligence. The boy is still speechless, and seems almost to quite lack ideas.

The one marked result they see is a cessation of head-knocking and a freedom from the restlessness and crying out which he formerly exhibited. They say that before the operation the boy used to knock his head most violently with his hands, or against the wall, or furniture; he used, also, to cry out as if in pain, and was very restless. His condition, for these reasons, was most distressing to witness. Since the operation they say he has given up these knockings of the head and the crying out, and certainly at present these symptoms are absent. He is only slightly restless, and somewhat inclined to be fretful.

Another point they notice is that before operation he did not seem to feel pain in a normal manner; the violent head-knocking did not appear to cause him any discomfort, but now he is sensitive to ordinary degrees of pain, like an average child of his age.

It cannot but be admitted that this cessation of head-knocking and extreme restlessness is a marked improvement in the patient's condition, and both the parents say that they would willingly again submit the child to operation, even if they knew beforehand that this would be the full extent of the improvement; and they think the risk, anxiety, and expense were worth incurring for this change in his symptoms, and with this sentiment I think most people would agree.

The following extracts are quoted from the notes of the patient N. L., a microcephalic idiot boy, on whom linear craniectomy was performed by Mr. Victor Horsley:—

*Before operation.**—"Constantly puts his hands to his head, and cries out as if in pain there; knocks and slaps his head with his hands."

* "Craniectomy, with the After-History of Two Cases," by T. Telford-Smith, M.D. *Journal of Mental Science*, January, 1896. Also see *British Medical Journal*, September 21st, 1895, and "On Craniectomy in Microcephaly," by Victor Horsley, B.S., F.R.S. *British Medical Journal*, September 12th, 1891.

Two years after operation.—"He does not knock his head, nor cry out. On the other hand there is no improvement in his speech; his vocabulary has not increased, and he still slavers, and he is, as far as I can see, a restless and, I fear, a hopeless case of idiocy."

The similarity between the symptoms of head-knocking and crying out in these two boys N. L. and R. H., before the operations, and the cessation of these symptoms afterwards, is remarkable, and probably has a pathological foundation. In both patients this is certainly a great improvement on their former state, but one would hesitate before saying there was an increase of intelligence. A mind has not been created.

What this improvement is due to would be difficult to say without a macro- and microscopic examination of the brains, as well as an examination of the skulls; that it is due to the relief of pressure could, perhaps, be accounted for in the case of R. H. by the supposition that this pressure was caused by subdural hæmorrhages, which probably took place during labour, and their after-effects. That there has in both cases been relief of irritation of some kind seems highly probable, but whether this irritation was inside the skull (brain) or outside the skull (scalp) is a question of interest. That the improvement is due to "a profoundly disciplinary effect upon the idiot,"* or that it is "largely through its pedagogic influence that an improvement in these cases takes place, and that an operation is allied in its effect to a severe piece of castigation," seems an hypothesis which, to say the least, is beyond the ordinary range of pathology, and would be difficult to prove by any ordinary methods of research.

As to the actual dangers of the operation, there is no doubt that these are now very small, the two great risks of hyperpyrexia and of shock being avoided by the method of performing the operation in sections, and only excising a small portion of bone at each sitting, and by taking care not to bruise the subjacent brain substance or interfere with the cortical thermotaxic centres in the cerebrum.

* "Craniectomy for Idiocy and Imbecility," by Charles L. Dana, M.D. *Pediatrics*, March 15th, 1896.

Mania with Amaurosis and Paralysis: Suspected Glioma.*

By W. J. VINCENT, M.B., Assistant Medical Officer,
Borough Asylum, Nottingham.

Eliza Elliott, aged 30, house-wife; married. Admitted into this asylum November 4th, 1896.

History of the Case.—The patient has not been in good health for the past 12 months. During this period she has suffered from menstrual irregularity, with considerable loss at periods varying between two and three months. Two of these "floodings" were probably miscarriages. She suffered much from headache, generally "all over" the head, but frequently referred to the "top of the head and back of the neck," and was sometimes sick, but not frequently, and at no particular time of the day. Three months ago, however, while at work in her home, she lost consciousness and fell, wounding her forehead and eye on the left side. She was convulsed, and this convulsion was followed by two others during that night. The seizures were described as beginning in the arms, which were spasmodically extended, the hands being clenched; the face was drawn to the right side, and the eyes rolled up; twitching of the facial muscles followed. The fits lasted a short time, and the patient did not sleep after the seizures. Vomiting was severe during the night.

Next morning patient was found to be unable to stand or to attend to herself in any way. During the next week headache was continuous and intense at times, the patient throwing herself about in bed in pain; vomiting was frequent, and food retained with difficulty—fluid food being often instantly rejected. Vomiting, however, gradually subsided and headache became less intense and persistent. Subsequently she developed hallucinations of sight, and vision was noticed to be imperfect. She became very restless and sleepless, "wandered in her mind," and faulty in habits. The family history is negative, except that two brothers were said to have been peculiar. Patient has had eight children—all healthy.

On admission to this asylum, a month after the sudden onset, she was absolutely helpless, very restless, chattered continuously and incoherently, and later became decidedly drowsy. If questioned she took but little notice, but sometimes made some irrelevant reply.

When examination was possible she was found to be fairly well nourished and of healthy aspect. There was no cardiac, pulmonary, or renal complication, and the nervous system alone showed signs of abnormality. There was much vacancy of expression, which I thought was due to paresis of the facial muscles, but there was internal strabismus and ptosis of the left eye. On the

*. Case shown at the General Meeting, February, 1897.

vision being tested patient could count figures and detect bright objects with the right eye; but in the left eye the amaurosis was absolute. The right pupil reacted sluggishly to light and with accommodation. The left consensually, but the direct reflex to light was lost. The pupils were moderately dilated. By the ophthalmoscope there was well-marked double optic neuritis, more advanced in the left eye. The movement of the left eye was deficient outwardly, the patient being unable to bring the eye well out toward the outer canthus. The tongue was coated, tremulous, protruded normally; there was tremor of the lips when patient was speaking, and speech was slurred and indistinct, and articulation imperfect.

Hearing was normal, but the sense of smell less acute than normal. Taste, as far as I could ascertain, was natural. The patellar reflex was unequal on the two sides, the right being decidedly the more brisk of the two, and this condition obtains to some extent at the present time. The superficial reflexes were normal, and sensation to touch and pain were natural. Patient was unable to stand, but had power over her lower limbs, and they were usually drawn up as she lay in bed. There was no incoordination of the upper extremities.

Progress of the Case.—During the first week the restlessness was extreme. Patient was placed in the padded-room, where she lay curled up, with her knees drawn up, arms flexed and head bent towards the sternum. She was continually throwing herself about, jerking her head, tossing the clothes off her, chattering incoherently the while. If questioned she sometimes made some reply, usually irrelevant. Her habits at this time were faulty. Subsequently she quieted down and gradually regained mental stability. The case was thought to be possibly of specific origin, and mercury and potassium iodide was given. The improvement continued, and patient regained muscular strength. Ptosis less marked, and the movement of the left eye of wider range, in an outward direction, but the squint still persists. She was able to stand and to walk if supported by a nurse on either side.

But while she improved both mentally and physically, her eyesight steadily became worse, and three weeks after admission the amaurosis was absolute, with dilated pupils and loss of light reflex in both eyes. By the ophthalmoscope the fundus showed no further change, well-marked papillitis being present. The mercury and potassium iodide was pushed at first, with the result that the patient was severely salivated after she had taken the drug for a fortnight. This cleared up under atropine in a week. During the time she was salivated she became mentally affected—she became restless and emotional, and developed hallucinations of sight and touch, patient imagining she had a child in bed with her.

From this time she progressed well, and is now pleasant, tidy,

and cleanly in habits. Memory for past events seems to be excellent, but there is much mental confusion as to recent occurrences. The ptosis is scarcely observable. There is still internal strabismus and absolute loss of sight, and the ophthalmoscope shows the papillitis to be clearing up, and the condition seems to be advancing into the atrophic stage.

The diagnosis of the case I have found of considerable difficulty and interest, and I have not been able to come to a definite conclusion. From the history of the case and the symptoms observed at the time of her admission I think there can be no doubt of some coarse lesion of the brain. We may safely eliminate epilepsy, embolism, and hæmorrhage, as optic neuritis seldom obtains in such conditions. The urine is normal, and there is no evidence of renal disease. No history of specific disease is obtainable from her relatives, though most careful enquiry was made.

That the optic neuritis is of anæmic origin may be, I think, excluded, and there is no history of lead poisoning. Neoplasm alone remains, and there are some symptoms in its favour.

Among the general symptoms we have convulsive seizures, vomiting, headache, and optic neuritis; the two latter symptoms persist at the present time. It is not uncommon for the convulsions to be few and infrequent, but one would certainly have expected the vomiting to have persisted, and this introduces one difficulty.

Of the localising symptoms the following may perhaps be of value:—Ptosis of the left eye and paresis of the left external rectus, causing internal strabismus; the more advanced disease of the left optic nerve; and as to the headache, the pain being on the whole most frequently referred to the left temple and left side of the head.

Another point of considerable value is, I think, the very rapid loss of vision—the patient was absolutely blind six weeks after the convulsions, and before the seizures her sight was stated to have been good.

This rapid loss of sight is in favour of a direct implication of the optic chiasma, so that the position of the lesion may be assumed to be at the base of the brain, almost central, but possibly involving the left side more than the right, and partially involving the 3rd and 6th nerves of the left side. The paresis of the lower extremity is not readily explained (especially as a specific history is not obtainable), unless direct pressure on the corpora striata could cause such an effect.

From the history we must exclude gumma, and though a localised meningitis might be seriously considered, the want of a syphilitic history is, I think, against it. If neoplasm the nature of the growth is difficult to determine.

There is another point in the progress of the case that leads to difficulty, inasmuch as the patient has steadily improved and was improving before the exhibition of mercury and iodide—therefore I cannot think the improvement can be ascribed to the drug.

In conclusion, I may venture to offer an opinion, hypothetical certainly, but still within the range of possibility. We know that gliomata are a fairly common variety of brain tumour, and that this variety of growth is liable to hæmorrhage into or around its substance. I think it probable that the case has been one of longer duration than is at first apparent, and that the sudden exacerbation of the symptoms might have been due to hæmorrhage into the tumour, and with partial absorption of the blood the severe symptoms have abated.

Hysterical Hemiplegia and Aphonia with Mental Symptoms.

By S. H. R. MONTGOMERY, M.B., Assistant Medical Officer, Borough Asylum, Nottingham.

S. U., married, aged 42, has led a hard life, was a heavy drinker and a noted boxer. He had always been healthy.

In November, 1895, he had a fit during which he was unconscious and jerked his arms and legs. On recovering consciousness he was found to have lost all power of speech although he was able and ready to make himself understood by signs. His right arm and leg had also become much weakened. For some days after this he had a series of convulsive attacks. These passed off, but left his arm and leg quite paralysed.

He was confined in bed from this time till June, 1896, when he gradually began to recover the use of his arm and leg; his voice, however, being still totally lost.

In October, 1896, he became an in-patient in a hospital, where intralaryngeal faradisation was performed on him. The result of this was complete and immediate recovery of his voice, followed by an attack of acute mania, during which he tried to jump through a window and struggled violently with those who tried to prevent him.

He was removed to this asylum the following day. On admission he was violent and maniacal. Next day he was quiet and sensible.

Range of vision of right eye was slightly decreased. Deaf in right ear. His right arm was wasted and slightly rigid and he

had a contracture into the palm of the 3rd and 4th fingers of the right hand. His right leg was wasted and rigid and he complained of great pain on attempts being made to flex it. Patellar reflex is equal on both sides, but exaggerated.

He improved mentally rapidly and was discharged on November 18th, 1896. His arm and leg had improved greatly. He could use his hand and was able to walk without help, although both limbs were still very weak.

The case seems peculiar from the fact that the hysteria occurred in a man of 45, who had always led an active life and was to all appearances of anything but a hysterical temperament.

OCCASIONAL NOTES OF THE QUARTER.

The Diamond Jubilee.

The notable event of the year, which is now holding the attention of loyal subjects of Her Gracious Majesty, even in the uttermost ends of the earth, marks for us, too, a Diamond Jubilee. Sixty years ago, in March, 1837, Mr. Gardiner Hill recorded the use of mechanical restraint for the last time in the Lincoln Asylum; and what had been thus successfully inaugurated by Dr. Charlesworth and Mr. Hill was completed and established by Dr. Conolly, who was appointed physician at Hanwell in 1839. The Victorian epoch will ever be held memorable as a period of expansion. The forces liberated at the close of the eighteenth century, marked in psychiatric medicine by the names of Tuke and Pinel, gathered in strength of purpose in philanthropic and scientific endeavour. The Queen and the Royal Family have lent all the weight of their influence to further well-considered measures for the amelioration of the people. To this last it is the afflicted and the suffering who gain the sympathy of Her Majesty; and the tribute of the people is rendered not unto Cæsar, but to the poor who are Cæsar's care.

We need not recapitulate the history of our department on this occasion. In spite of unworthy detraction, and ill-informed criticism, the work of the past sixty years stands a monumental record of patient toil and splendid achievement. We may freely admit that much has yet to be done, and even doubt the possibility of the perfection of the species. But

when we reflect upon the vast, the fundamental change which cannot but be evident upon the most casual survey of the whole conception and treatment of insanity, beneficent in intention, and increasingly successful in results, we cannot but take credit for our predecessors and for those who yet live to labour.

We venerate the memory of Lord Shaftesbury, leader of men in the long and stubborn campaign against ignorance and prejudice, the intimate history of which is in danger of oblivion. When that true statesman last came among us, then as ever a friend and counsellor, he contrasted the state of lunacy in 1881 as compared with 1828. He called to mind the utter and complete ignorance of the earlier times, when the lunatic was looked upon as beyond cure and care, and said "When I see and know that there is an Association formed like this, and that medical men are devoting their attention so much, *and more than ever*, to the subject, I think there are very great hopes indeed for the future." These are weighty words, uttered in the evening of life, by one who was emphatically a man of the age. It is for us to verify these hopes, to fulfil these high expectations.

Certificated Attendants and the Royal British Nursing Association.

The number of attendants possessing the Certificate of our Association has now reached two thousand five hundred, there is every probability that this number will be very largely added to as time passes, and the status conferred by the certificate in relation to Asylum Committees is already assured, as evidenced by the increased pay and other advantages given to its possessors in many institutions.

The relation of these certificated attendants to the public, however, remains yet to be established, and the importance of the first steps in this practically new relationship cannot be too strongly insisted on or too carefully weighed by the members of our Association. Dr. Outterson Wood's paper on this matter, in which he has taken so active an interest, (published in this issue of the Journal), draws attention very opportunely to this question.

The mental nurse in private practice has not hitherto, as a rule, possessed such training as the certificated nurses now have, and as a result much mental nursing has been done by the hospital trained nurses. The latter have, therefore, a

distinct interest in retaining as long as possible their share in a lucrative branch of nursing. The vituperation consequent on Dr. Wood's proposal that the certificated asylum attendant should be eligible to be placed on a separate register of the Royal British Nurses' Association, may not therefore have been altogether dependent on the want of information so freely manifested.

The correspondence, in various medical papers resulting from this attack, has, however, fairly conclusively shown that the certificated attendant has passed an examination considerably in advance of anything demanded from the certificated hospital nurse, and is therefore in as good if not a better position for seeking the confidence of the public in this special line of work.

Certificated mental nurses in private practice, unattached to asylums, will need some combination which can assure the public not only of their technical qualifications, but of their moral character. The question the Medico-Psychological Association has to consider is whether this can be supplied by its own organisation or by adopting the proposed alliance with the R.B.N.A., or by other means.

The small number of private mental nurses would render an independent organisation difficult, and an organisation in connection with our own body would not be easy to establish, if indeed within the scope of our work; so that an alliance with some other body would seem to be almost necessary.

If such association be made, as for example with the R.B.N.A., we must insist that no inferior or second rate position be accorded to the bearers of our certificate. These are worthy, even now, to rank with the certificated nurse, and the standard both of instruction and examination is rising much more rapidly with the former than with the latter.

Certificated attendants, therefore, need no patronage or condescension, and the Association, so far as it acts for them, should insist on the fullest recognition of the high standard of moral character and of special instruction necessary to obtain their qualification.

Nursing in Belgian Asylums.

This question of nursing is not insular; it is debated at home and abroad. It is an outstanding fact of the age—symptomatic indeed. While the modern training of asylum nurses has been in active development in this country and in

America throughout the last decade, resulting in such notable facts as are recorded by Dr. Outtersen Wood, we regret to note that the efforts of Dr. Jules Morel have not met with a more worthy response in Belgium. Dr. Peeters in 1892 warned his colleagues that uneducated nursing must be to some degree sterile of results, and he boldly claimed that the nursing staff is called to a higher mission in an asylum than in an ordinary hospital. This has been recognised in Holland, where the Psychological Association has called upon its members to persevere in their efforts for the improvement of the nursing staff, and has instituted an examination similar to our own. A similar movement has taken place in Germany, where, in 1885, it was supported by the veteran Dr. Laehr, and where Dr. Siemmes has since declared that they can look forward with confidence to a happy solution of the question.

It is extraordinary that Belgium should lag behind in this department of mental science. Dr. Sibbald has shown what is being done at Gheel and Lierneux in previous pages of this number of the Journal; and Dr. Morel has lately recorded the notable results of the medico-psychological service in the Belgian prisons to which three asylum physicians were appointed in 1891. In these matters we are not abreast of the times; but Belgium and Britain must keep step in the march of progress.

It would appear that the familiar, unworthy objection has for the time prevailed in the Society of Mental Medicine of Belgium—the fear that the nurse may be transformed into the *demi-savant*. As who should say that the anatomy and physiology of a locomotive engine ought to be kept strictly private in case the driver should become an inferior engineer! But Dr. Morel must return to the attack, for even were his opponents' cause righteous there is no Joshua among us to say, *Sun, stand thou still upon Gibeon*.

Aphasia and Will Making.

Dr. Byrom Bramwell has dealt with this question in a suggestive manner. The legal attitude in reference to wills made by the insane is generally in accordance with justice, for judgment may be said to be ruled by the case of *Banks v. Goodfellow*, when Lord Chief Justice Cockburn adopted the earlier test, "Was the capacity in this particular case adequate to the act?"

Wood Renton states that "testamentary capacity consists in the possession by the testator of a memory sufficiently active to recall (a) the nature and extent of his property, and (b) the persons who have claims upon his bounty, and a judgment and will sufficiently free from the influence of morbid ideas or external control to determine the relative strength of these claims." And further, "the testamentary capacity of aphasics depends upon the same considerations." It is plain that each case must be determined on its own merits, whether the person be insane or aphasic. The means of communication are limited, but the associated mental defects constitute the real difficulty in determining the validity of such a will. Dr. Bramwell points out that mental defect is more probable in total aphasia, and greater in cortical than sub-cortical aphasias. He enters at length into the methods of examination, and claims that such cases should be investigated by competent physicians. Professor Gairdner has contributed a letter to the *British Medical Journal* of the 12th June, in which he concludes that "it is almost impossible to lay down categorically or dogmatically the conditions under which a particular aphasic can, or cannot, make a bequest." We recall Dr. Savage's memorable words—*no two houses fall into ruins in exactly the same way*, and accept Dr. Gairdner's conclusion as a summary of our present knowledge.

Temporary Treatment of Incipient Insanity.

The Commissioners in Lunacy received a joint deputation of the British Medical Association and the Medico-Psychological Association at Whitehall Place, on the 27th May, when the matured proposals of the medical profession in regard to the temporary treatment of incipient insanity were judiciously stated. It will be remembered that this matter arose in consequence of a motion by Dr. Rayner, accepted by the meeting of the British Medical Association at Carlisle, to the effect that similar provisions should be introduced for England to those already existing in Scotland. The introduction of the Lunacy Bill to which we refer above affords an opportunity for this desirable procedure. Dr. Needham spoke favourably of the proposal, and put the matter in the right light by remarking that the essence of the proposal was the vagueness of the certificate as applicable to incipient cases,

and the propriety of such a legal provision, if likely to regulate the illicit treatment of the insane now engaged in. Mr. Bagot, on the other hand, apparently prefers that every case of insanity should be swept into the asylums of the country, and holds that official information which is not necessarily followed up by official inspection is utterly futile. The unanimously favourable opinion of commissioners, specialists, and family physicians in Scotland, regarding this valuable provision of the Scottish Lunacy Acts, gets short shrift at the hands of Mr. Bagot. The result was that the deputation was advised to go direct to the Lord Chancellor.

Lunacy Act Amendment Bill.

Lunacy Legislation Amendment, to the extent of thirty-nine clauses, is again necessary, and, we regret to add, does not by any means exhaust the opportunities of amendment in the Lunacy Law.

Many of the proposed alterations are of a comparatively slight character, but others are of the utmost importance to our specialty.

The superannuation scheme is one which will probably be opposed by most members of our specialty, and accepted by few; it is to be regretted that a more united opinion does not prevail. The Poor Law Officers' Superannuation Act, which, with certain favourable modifications, it is proposed to follow, does not err on the side of liberality, but the advantages of continuity of service, with the possible addition of ten years to the length of service in special cases, may bring superannuations to something near equality with the existing scale, while the certainty of pension would be an advantage outweighing considerable loss of possibilities. To render it acceptable the age of 50 years must be the lower limit at which superannuation is possible.

The granting of allowances and gratuities in cases of injury under Section 24 is a most satisfactory advance.

The power of granting remuneration to patients for their labour (Section 28) is another satisfactory sign of progress, which may become of great importance in asylum management.

Little can be said in regard to the clauses which bring the lunatic hospitals under the same relation to the Commissioners as other asylums, but Clause 16, in restricting

their branch establishments, would seem to put undue restraint upon the development of the cottage system.

The jurisdiction of the County Court Judge, in cases of small property, conferred by Section 9, is a great improvement, but the limit of annual income, instead of being fifty pounds, might well have been drawn at one hundred, as in the similar provision in the Scottish law.

Urgency orders by the first Section of the Act are to be limited in their action to four days, instead of seven, as in the existing Act. This will probably lead to a great deal of inconvenience, and will possibly lead to the occasional setting at liberty of persons acutely insane, an evil much greater than any which this change of procedure can possibly counteract.

The scheme of penalties to be inflicted for erroneous reports under Clause 29 savours rather of legislation against habitual criminals than for the direction of the members of an honourable profession.

We append a summary of the Bill in '*Notes and News*,' to which we refer our readers for the less important changes.

The Alleged Increase of Lunacy in England and Wales.

The special report of the Commissioners in Lunacy to the Lord Chancellor has lately been issued. They state that whereas in 1859 the number of lunatics, idiots, and persons of unsound mind in England and Wales, reported to the department as resident in asylums and other establishments for the insane, and in workhouses, or with their relatives or others, was 36,762, the number had increased in 1896 to 96,446, showing a ratio to every 10,000 of the population of 31·38, as compared with 18·67 at the previous period. The replies received from the Medical Superintendents of Asylums indicated that 10 were of opinion that occurring insanity has increased, while 30 were of a contrary opinion, and 22 were unable to arrive at a definite conclusion. The Commissioners point out that it is a noticeable and important fact that while the increase in the number of pauper patients has been from 31,401 to 87,417, that in the private class has only been from 4,679 to 8,265, the ratios having risen from 15·95 to 28·44 for paupers, and from 2·38 to 2·69 only for private patients, per 10,000 of the population. It is obvious, therefore, that the increase in numbers and ratios has been almost entirely confined to pauper patients, and that the class upon whom

some of the insanity-producing causes often referred to would have been most likely to operate severely have scarcely suffered in any degree. Indeed, the ratio for private patients is actually lower than in 1879, and is still undergoing an annual diminution. The increase in the numbers and ratios of paupers is, however, strikingly large, and out of all proportion to that of the population. It would be of extreme interest to ascertain if the apparent decrease in private cases was not really due to the avoidance of certification, resulting from the magisterial intervention.

After giving elaborate tables of statistics, the Commissioners say:—These tables prove that while in the general population there has been a considerable increase in those ages in which the greatest liability to attacks of insanity is known to prevail—namely, from 20 to 45—there has been a marked diminution in the ratios among the insane in those ages, and a large increase in the numbers and ratios at the more advanced ages; the obvious inference being that accumulation, and not fresh production, has been the most influential factor. We have thus, we think, by means of the figures within our reach, demonstrated at least the probability that much of the apparent increase of insanity has been due, not to an increase in the incidence of that disease, but of the aggregate of persons affected by it, and to their redistribution; in other words, that insanity has not greatly increased, out of proportion to the increase of population, but that the numbers of the insane have greatly so increased, and that they have been so redistributed as to give the impression of an actual increase of the disease. In conclusion, the Commissioners suggest the causes which have been, and are, at work to produce this continually augmenting accumulation of the registered insane, especially in institutions. These causes may generally be summarised as greater accuracy of registration; extended views as to what constitutes insanity requiring confinement; the retention in workhouses of a diminished proportion of pauper lunatics; the four shilling grant; the increased popularity of asylums, &c.

PART II.—REVIEWS.

The Pathology and Treatment of Neurasthenia. By Prof. O. BINSWANGER. Pp. 440. Price 9s. Published by G. Fischer, Jena, 1896.

Most general practitioners and every specialist in nervous diseases must, at some time or another, have been amazed by the multiplicity of symptoms which neurasthenia can manifest, and perplexed by the difficulty of curing them. Any work, therefore, that throws light on the one, or gives assistance in the other, is to be cordially welcomed. That Prof. Binswanger's monograph does both will be readily acknowledged by anyone who reads it. The book, as the author states in the preface, is the outcome of a series of lectures delivered to the students of his clinic. That a professor of psychiatry is able, from the material at his disposal in the institute under his charge, to illustrate with over 100 cases a subject not in this country included under mental diseases, though very closely related thereto, offers an instructive example of an undoubted advantage which German students possess, but which we here unfortunately do not. Besides this illustration of its origin the book is likewise thoroughly German in its methods, that is to say, the author not seldom sacrifices interest and freshness for the sake of minute accuracy and laboured thoroughness. This may be no fault in the eyes of an enthusiastic specialist, but the student, to whom the book is primarily addressed, and who approaches the subject for the first time, is apt to have his interest exhausted before he gets to the end. Exception may also be taken to the arrangement of the subjects of the various lectures. The first treats of the general pathology and pathogenesis of neurasthenia. In it the author makes an attempt to define the limits of the disease and to give a definition of it in general scientific terms. This, however, is such as no one not already pretty familiar with the disease could fully appreciate. It is only when the last lecture is reached that he gives the means for obtaining a satisfactory clinical diagnosis, and the result is that, until that point is reached, the reader's ideas of the disease as a whole and of its distinctive features are exceedingly hazy. This might easily have been remedied by giving at the outset a general description of its prominent

symptoms, so that a definite picture might be present to one's mind when such abstruse questions as the pathogenesis and etiology are discussed. As it stands, one is apt to miss the full significance of the early chapters without the knowledge supplied in the later ones.

In the first lecture, when discussing the question of pathogenesis, the author emphasises the fact that neurasthenia presents the most protean forms, and may assume the characters of almost every other neurosis and psychosis. In fact there is no strict line of demarcation between neuropathic and neurasthenic symptoms. He then gives a summary of the theories which have been advanced to explain the essential nature of the disease. In promulgating his own view he laments the unsatisfactory condition of the pathology of the disease, and acknowledges that there is very much that is purely hypothetical in any explanation that can be offered. He discusses the physiological phenomena of fatigue and exhaustion, and draws a parallel between them and the symptoms of neurasthenia. He considers the parallel so close that he is inclined to regard the latter as due to a prolonged condition of over-fatigue. In the second lecture, which treats of the etiology, the cause of this condition is traced, in most cases, to a congenital weakness of nerve-power. In this connection he discusses at some length the rôle of heredity, but the limits of a review will not permit of more than a reference to this most interesting and important question. His views well repay careful study. In the third lecture the special etiological factors are considered, and he lays much stress on the necessity for great care being exercised in the adaptation of the environment of all those who possess a hereditary neurotic weakness. In these days when nervous diseases of all kinds appear to be on the increase, this is a point to which more and more attention will have to be directed. In the end the treatment of all diseases is mainly a modification of environment external and internal, and in diseases of the brain this is specially true. A person cannot alter his heredity, and, in the present condition of public opinion, the State is powerless to control it; so we are reduced to do what we can to make the environment conducive to keeping latent disease in abeyance.

The next seven lectures are devoted to the symptoms of neurasthenia, and these are classed under various headings in the following order:—Disturbances of sensation and

ideation, of muscular power, of the circulatory system, of metabolism and nutrition, and of sexual function. This part of the subject is treated very fully and satisfactorily. He gives many clinical illustrations of various points which lend variety and furnish an additional means of emphasising certain features of the disease.

The eleventh lecture gives the author's views as to the various types of neurasthenia. He bases his classification on the outstanding symptoms in each case, and as a result he finds five varieties. As the symptoms may, however, vary from time to time, the same case may pass from one to another variety at different periods of the illness. His five types are the *psychical*, the *motor*, the *dyspeptic*, the *angio-neurotic*, and the *sexual*. The psychical form he further subdivides into the hereditary, the acquired, and the hyper-algesic, while the motor form also includes two varieties—the irritative and the paretic. The nomenclature explains itself, so that it is unnecessary to enter further into a description of their characters. In the next lecture the course, prognosis, and diagnosis are treated of. In it he draws attention to the close relationship between neurasthenia and mental disease, and many of the clinical cases he describes also illustrate this. He considers that the occurrence of neurasthenic symptoms in puberty is strongly indicative of mental instability and of the necessity for care being exercised to prevent actual insanity from developing. He also notes that even after recovery from an attack of neurasthenia there is apt to be some permanent mental weakness, just as frequently happens after an attack of insanity. In regard to the diagnosis, he says this is often arrived at only by a comparison of cause and effect. It ought to be made only (1) "if one is satisfied that the local symptoms are the outcome of inherited neuropathy, and if the former, in themselves slight, can evoke the whole series of symptoms of nervous weakness; or (2) if one is satisfied from the clinical investigation of the case that from the local disease general weakness of the nervous system has been developed." He issues a warning at this point against regarding isolated symptoms as sufficient to justify a diagnosis of neurasthenia. This should only be done when they are associated with others which characterise one or other of the types he has described. There are, however, certain symptoms which have come to be regarded as "neurasthenic stigmata," and the existence of these should

always suggest that disease to one's mind. They are (1) Feeling of pressure on the head ; (2) Disturbance of sleep ; (3) Pain in the back ; (4) Muscular weakness ; (5) Dyspepsia ; (6) Sexual disturbances ; (7) Mental disturbances. When two or three of these exist together the diagnosis is comparatively easy.

The last three lectures are concerned with treatment, and the author rightly considers this of great importance, and goes into it very fully. No class of case is a greater bugbear to a physician than a chronic neurasthenic, and he is often at his wit's end as to what he can do. As has been already said, the author lays great stress on the regulation of environment as a prophylaxis against the disease, and he is equally insistent on its importance in treatment. In fact the latter in his view is largely a question of making the surroundings as favourable as may be in each case. He attributes some importance to the effects that may be brought about by simple suggestion. He condemns the actual production of the hypnotic state, but confesses that much good has been done by the French school by showing what may be done by simple and persistent suggestion. He gives also the results of his extensive experience of the effects of change of scene, isolation, rest, active and passive exercise, massage, over-feeding, and hydrotherapeutics, as well as of various drugs which he has found useful in the treatment of special symptoms. Those who are anxious to get suggestions about the use of any or all of these cannot do better than turn to Prof. Binswanger's book. Before closing he issues a warning which he considers much needed, to the effect that one should never forget that it is not a disease but a sick person that has to be treated. This is the best guarantee that could be given that his point of view in treatment is broad-minded and thoroughly rational.

I Sogni e il Sonno nell'Isterismo e nella Epilessia. By Dr. SANTE DE SANCTIS. Roma : Società editrice Dante Alghieri, 1896. Pp. 217. Price lire 2.

Dr. Sante de Sanctis (an energetic young alienist at Rome), who has devoted special attention to the pathological and psychological aspects of sleep, has in the present noteworthy little volume made a careful attempt to investigate hysteria and epilepsy from this point of view. His object was to

ascertain if there are any "nocturnal syndromes" which would assist in the diagnosis of hysteria and epilepsy. For this purpose he studied 53 cases of severe hysteria (including 10 men), 45 cases of slight hysteria, 45 cases of epilepsy with complete attacks (*grand mal*), and 21 of epilepsy with incomplete attacks (*petit mal*); he judiciously omitted the doubtful or borderland cases, hystero-epilepsy, etc. The history of each case is given, with special reference to the phenomena of sleep. It was found that sleep is habitually deep in 40 per cent. of the cases of severe hysteria, habitually light in 60 per cent.; in the cases of slight hysteria it was deep in 9 per cent. and light in 91 per cent.; and the author concludes that habitual depth of sleep is in direct relation with the gravity and duration of the disorder, and that it increases with the patient's age, while in young subjects and those but slightly affected the sleep is almost without exception light. In both epileptic groups the tendency to profound sleep is much more marked (except in those whose attacks are psychic rather than motor), and in old and grave cases of epilepsy it is deepest of all. In opposition to many ancient and modern authorities, Dr. Sanctis does not find that somnambulism is common either among the hysterical or the epileptic; he found it actually in one hysterical case, and in the previous history of six others, actually in not one epileptic, and only in the previous history of four. Talking during sleep was found to be habitual in nine hysterical and two epileptic cases, occasional in 12 hysterical and five epileptic cases. The author attaches some importance to sudden startled awakenings without external stimulus; this was found frequent in nearly all the women affected by slight hysteria, in two-thirds of those affected by severe hysteria, in nearly all the cases of *petit mal* and about half those of *grand mal*; old epileptic cases were seldom conscious of the phenomenon. Hypnagogic hallucinations (complete or rudimentary, but always distinct) were common, being found in about half of the 53 cases of severe hysteria, and in 38 of the 45 cases of slight hysteria; in epilepsy, however, they were well marked only in six cases of *grand mal* and 12 of *petit mal*, never in old epileptics. They were associated with light sleep, and in the order of decreasing frequency were visual, auditory, verbo-psycho-motor, and tactile, never gustatory or olfactory; the contents of the hallucinations were much the same in both hysterical and epileptic cases,

though more brilliant in epilepsy and severe hysteria than in slight hysteria. Nightmare (in Macario's strict sense of the word as "a sensation of oppression and anguish, with no power of movement, resulting in a fantastic image which is regarded as the cause of the discomfort") was found with abnormal frequency (its occasional occurrence being regarded as normal) in six of the 53 cases of severe hysteria, in none of those of slight hysteria, in 10 of the 45 cases of *grand mal* and eight of the 21 cases of *petit mal*, a conclusion, as the author points out, more in harmony with old than with modern views. Complete insomnia, while very rare, is less rare in hysteria than in epilepsy, and is most frequent in a cyclic form, often occurring at rhythmic intervals, while incomplete insomnia is very frequent, especially in slight hysteria and in *petit mal*. With regard to dreaming, Dr. Sanctis found that out of 53 cases of severe hysteria 35 were fair dreamers, 10 great dreamers, while eight did not dream; frequent dreaming was associated with light sleep, while those who slept deeply, the old convulsive cases, the intellectually defective, the sleep-walking and sleep-talking cases, dreamed little or not at all. In the 45 cases of *grand mal* there were, however, only 10 dreamers, and in the 21 cases of *petit mal* 16 were great dreamers, four fair dreamers, and one (sleep-walker) did not dream at all. In the great dreamers of the group of grave hysteria, dreams of pain and anguish were most frequent, then those of fear and terror, then erotic and pleasurable dreams. The "phenomenon of Pitres" (erotic dream with emotions of opposed character) was only found once, but in another case "contrast dreams" were habitual. The repetition of the same dream during a certain number of nights occurred in three cases. Macrozooscopic dreams (i.e., of large animals) occurred frequently in 62 per cent. of the great and medium dreamers in the group of severe hysteria (while in alcoholism microzooscopic dreams predominate). In *grand mal* dreams of anguish and terror are much less habitual than in hysteria, and zooscopic dreams much rarer, extremely rare if the influence of alcoholism could be eliminated. Although pleasurable dreams generally are rare, erotic dreams are frequent. In *petit mal* dreams of all the above emotional tones are frequent, while in old epileptic cases the contents of the dreams are indifferent. The dreams of epileptics generally are brief and simple—sudden visions and panoramas—while the dreams of the hysterical constitute

complex dramas and romances. It must, of course, be remembered that since the hysterical cases were chiefly women and the epileptic chiefly men, some of these variations, when real, are probably due more to sexual than to pathological differences.

The author considers various other points arising from his investigation—the memory of dreams, the influence of the emotional tone of dreams on the waking emotions, the relationship between the activity of sleep and hysterical or epileptic fits—and concludes that the study of these aspects of hysteria and epilepsy are really of diagnostic value. Incidentally, full bibliographical references (not always quite exact) are given in foot notes, and the author exhibits an exhaustive acquaintance with the literature of his subject.

Juvenile Offenders. By W. D. MORRISON. London: Fisher Unwin, 1896. Pp. 317. Price 6s.

This book, written by the editor of the Criminology Series, is the third volume of that series. It has not been possible (as we have before pointed out in a wholly friendly spirit) to praise without reserve the manner in which the two earlier volumes were presented to the limited circle of English readers who are interested in the problems of criminal anthropology. It is, therefore, with the greater pleasure that we find ourselves able to speak of the present volume with unqualified approval and admiration. Mr. Morrison is a clear and vigorous writer; he is very well informed concerning the state of criminological science abroad, and he is unquestionably familiar with the problems of juvenile criminality in England, with which he makes it his chief concern here to deal, as well as with all the fallacies in which the data are entangled. In some respects Mr. Morrison's work is less comprehensive than Ferriani's larger book on the same subject (though in both the anthropological side of the subject is but slightly treated), but it would be altogether inadequate to say that this book is the best on the subject in English; so far as we are aware there is no other that can even be compared with it.

The book is divided into two parts, the first dealing with "The Conditions of Juvenile Crime," the second with "The Treatment (so in 'Contents,' in body of book 'Repression') of Juvenile Crime." The opening chapter is concerned with the extent of such crime, and Mr. Morrison ably marshals

the facts and considerations which tend to show that it is not diminishing; whether "we look at the old world or at the new, we find that juvenile crime is a problem which is not decreasing in magnitude with the march of civilisation." In the second Chapter, on the distribution of juvenile crime, it is pointed out that criminality, whether in the young or the old, follows the same laws, since it depends on the same conditions, and is therefore more abundant in dense urban populations; here a plea is entered for the development of rural life: "It is the country which contains the most vital elements of the population, and the supreme aim of statesmanship at the present time should be directed towards the establishment of a hardy and enterprising race upon the soil." It is further pointed out that where there is most pauperism there is least crime. Chapter III. deals with juvenile criminality according to sex, and due stress is laid upon the biological factor in decreasing the liability of girls to commit crime, a factor which is sufficiently demonstrated by the early age at which the sexual difference in criminality begins. In the next Chapter, dealing with age, it is shown that nearly everywhere criminality reaches its maximum between the twentieth and twenty-fifth years, and incidentally the relationship of criminality to intemperance is discussed with a temperance very rare among those English writers who are accustomed to lay down the law as to the causation of crime by alcohol. Chapter VI. deals with "The Physical Condition of Juvenile Offenders;" it is wholly statistical, and Mr. Morrison skilfully weaves together the threads of evidence furnished by the death-rate and illness-rate of children in industrial and reformatory schools, by the large proportion of such children descended from short-lived parents, by the average weight and stature, and by the results of Dr. Warner's enquiries, reaching the conclusion that "among the many causes which produce a criminal life the physical inferiority of the offender is one of the most important." In the following Chapter on "The Mental Condition of Juvenile Offenders," Mr. Morrison is clearly embarrassed to find direct statistical data to work upon. Using chiefly indirect evidence he concludes that the mental condition is abnormal, and for details refers us to Strümpell, Clouston, Ferriani, Warner, etc. Chapter VII., on "Parental Conditions," contains an excellent discussion of illegitimacy and the facts which complicate its significance, such as the normal prevalence of illegitimacy in rural districts where the social conditions are normally opposed to

crime: it is shown that "51 per cent., or more than one-half of the inmates of industrial schools, is composed of children who are either illegitimate or have one or both parents dead, or are the offspring of criminals and parents who have deserted them. In other words, more than one-half of the population of industrial schools are in an abnormal parental condition." Putting all the facts together, even as regards the delinquent children who live at home and have both parents alive, "in a very small percentage of cases is the character of the parents fit to bear examination. At the very least eighty of them in every hundred are addicted to vicious, if not criminal, habits." Chapter VIII. shows the bad economic conditions under which juvenile crime occurs, and the author remarks that "at present the community confines its operations to bestowing industrial training on children who have actually fallen; it is probable that it would be a wiser, and in the end a more economic, policy to bestow a similar training on those who are likely to fall."

Part II. occupies somewhat less than half the volume, and discusses equally well the methods of treating juvenile crime. The chapters in this part deal successively with "Admonition," "Fining" (in which is also advocated compulsory labour without detention for petty offences), "Corporal Punishment" ("it is perfectly safe to remark that neither imprisonment nor corporal punishment possesses much value in preventing a repetition of the offence unless other conditions of an entirely different character are brought into operation"), "Imprisonment" ("wherever an alternative penalty can be adopted as a substitute it is a clear gain to the community as well as to the delinquent") and "Corrective Institutions."

Mr. Morrison will be a fortunate editor if he can find writers to discuss the other aspects of criminology for the English reader with a mastery of the facts and a power of presentation equal to his own.

Alkohol, Trauma und Epilepsie. By Dr. WILDERMUTH.
Reprint from the *Zeitschrift für die Behandlung Schwachsinniger und Epileptischer*, 1897, Nr. 4, Pp. 11.

With admirable clearness and brevity, Dr. Wildermuth examines the question how far intoxication and injuries to the brain have an influence in causing epilepsy. His own observations do not lead him to believe that the abuse of

alcohol is so frequently a cause of this disease as some writers make out; but he insists on distinguishing the epileptiform convulsions of chronic alcoholism from the "true epilepsy," a disease *sui generis*, the cause of which is unknown to us. He, however, believes that drunkenness in the parents is often the beginning of a neurosis descending to the children, which ends in epilepsy. Dr. Wildermuth has arrived at the conclusion that true epilepsy is seldom the result of injuries to the head, though these may act as exciting causes where there is already a previous predisposition.

Kliniske og Aetiologiske Studier over Psykiske Udviklingsmangler hos Børn, af CARL LOOFT. Bergen: John Griegs. 1897. Octavo, pp. 184. (Clinical and Etiological Studies on Deficient Mental Development in Children, by Dr. Carl Looft.)

It gives us much pleasure to receive from Norway such a well-written and careful monograph upon idiocy and imbecility. The author, who practises as a physician in Bergen, has made most of his observations upon the cases in Soethre's Institution at Ekelund and his school for the weak-minded children at Bergen. The book bears indubitable marks of close and careful clinical study, and the author's acquaintance with the literature of the subject in French, German, and English is very remarkable. The author has also given much attention to the growth of the mind in normal children. In his careful enquiries into the etiology of idiocy, Dr. Looft has found that out of 328 boys and 249 girls 20·6 per cent. of the former and 12·7 of the latter were epileptic. Epilepsy may be a cause of imbecility as well as a complication. There are no endemic cretins in Norway. Dr. Looft was the first to use the thyroid treatment for sporadic cretinism. He has also tried it in cases of Mongolian idiocy, but with little benefit. The chapters on cretinoid idiocy show special care and research and are illustrated with eight woodcuts. He quotes Bourneville's dissections, who found absence or deficiency both of the thyroid and thymus glands in many cases of idiocy. Enquiring into the cases of 539 imbeciles and idiots, Dr. Looft found that amongst the parents there were abnormal mental conditions in 17 per cent., in 3·7 there was alcoholism and in 9·1 tuberculosis. As might be supposed the congenital forms of idiocy were most frequent with such a parentage. The

small share given to drunkenness as a cause of idiocy is noteworthy as compared with Dr. Langdon Down's incorrect statistics in his book on *The Mental Affections of Childhood* which gave some offence in Norway.

Twins and multiple births were common amongst the families who had imbecile or idiotic children, and from 4 to 5 per cent. of such children were twins. He has found that rickets play a great part in the etiology of imbecility in cases at Hamar, Bergen, and Christiania, and he found 14·9 per cent. were affected with rickets. Infectious diseases, especially scarlet fever and whooping cough, occasionally become causes of imbecility and idiocy.

In the course of some enquiries which Dr. Looft has made upon mirror writing he found that out of 103 weak-minded children (55 boys and 48 girls) 5 boys = 9·1 per cent., and 25 girls = 12 per cent., wrote in mirror writing; but in Soethre's Institution, composed of cases of more decided imbecility and idiocy, out of 83 boys and 30 girls, 15·7 per cent. of the boys and 40 per cent. of the girls showed this peculiarity. On trying an equal number of normal boys and girls he found that the mirror writers were 2 with the boys and 4 with the girls = 5·7 per cent. and 11·1 per cent. Thus mirror writing was proved to be much commoner with imbecile children and commoner with girls than with boys. Amongst the normal children those who wrote mirror writing seemed to be less attentive, more irritable, or in weak health. Dr. Looft does not explain how these investigations were conducted, nor does he allude to the connection of mirror writing with left-handedness.

Staat und Kirche in der praktischen Irrenpflege. Von Professor SOMMER. Jena, 1896. Verlag Von Gustav Fischer. Pp. 40.

Psychiatrie als Examensfach. Von Professor SOMMER.

Soemmerings Lehre vom Sitz der Seele. Inaugural Dissertation. Von ROBERT SOMMER. Würzburg. 1891. Druck der Stahel'schen K. Hof-Buchdruckerei. Pp. 20.

Eine Methode zur Untersuchung feinner Ausdrucksbewegungen (reprint). Wiesbaden.

In the first of these papers Professor Sommer makes a vigorous protest upon the interference of the pastors of the Evangelical Church who make claims for the treatment of the insane on the ground that the care of the mind belongs

to the clergyman as the care of the body belongs to the doctor. He cites the observation of one of these ecclesiastics that when the soul, deserted by the spirit, falls into spiritual death and drags the body to destruction, then soul and body become the playground of bad spirits, amongst whom are especially mentioned the mad spirit (*Irrgeist*), the spirit of the world and of the time, and the devils mentioned in Scripture. Those suffering from insanity are reminded of Nebuchadnezzar and are advised to imitate his acknowledgment that he was suffering for his sins, and like him to pray for recovery. One pastor has boldly said that the less the physician of the body practises his medicinal methods upon those deranged in mind the better for the sufferer. Other sayings of the clergy are recorded, bringing into striking contrast the views and language of the old divines and schoolmen and those of the medical men who approach the study and treatment of insanity from the corporeal side. It appears that in Northern Germany the clergy have obtained the lead in some charitable efforts to ameliorate the lot of the harmless insane, the idiotic, and the epileptic, and show a disposition to make light of the aid and oversight of the medical men. There are such tendencies in our islands.

Lay directors, lawyers, and other functionaries often show a distaste for the advice of the doctors, who, taking their premises from data incomprehensible to the lay mind, arrive at conclusions that are sometimes disagreeable. Unable to argue with them, these men in authority resent their dictation, and get on much better with secretaries who have no conscientious objections to yield, and who, even in arguing or expostulating, do so in terms which they cannot follow. We agree with Dr. Sommer that all the *vesaniæ* are diseases of the nervous system which for their successful treatment require the watchful study and sustained attention of the physician.

It appears that in Southern Germany priestly interference is even more grievous; in Great Britain we have little to complain of clergymen taking the management of asylums for the insane, idiotic or epileptic. Where laymen are in charge of such institutions, they are rarely educated men; but they look well after appearances, and if the mortality of the patients under such management is high, this does not seem to strike the directors as worthy of note.

Dr. Sommer bewails the incorrect and unhealthy books with which the public satiate their curiosity about matters

pertaining to insanity, and the deficient instruction of the ordinary medical practitioner. He wishes all students of medicine to have clinical instruction in mental diseases. Thus far we are quite in accord with the learned Professor; but when he insists that the radical cure for all this is additional examinations, we say that if the load on the candidates for degrees is to be made heavier by a new burden, some other weight must be taken off, otherwise the remedy would be worse than the evil. In this country we have enough of examiners, and in Germany men say that they have too much. The time, mental liberty, and even the health of our studious youth are already too much infringed upon by the inordinate demands of the examiner, and there are already signs of revolt, though perhaps things will need to get worse ere they are improved.

In Dr. Sommer's inaugural dissertation he recalls former views about the seat of the mind. The older anatomists were at a loss to understand how the unity of mental operations could be sustained with a double brain. They were thus led to make the immediate seat or point of connection between the immaterial mind and the body in some organ which did not appear divided like the hemispheres; the pons, cerebellum, corpora quadrigemina, corpus callosum and septum had each the honour of being the common sensorium. Descartes placed the mind in the pineal gland, and Soemmering assigned the function of uniting the spiritual and the corporeal to the fluid of the lateral ventricles, to which he believed that he had traced the ends of all the nerves. Dr. Sommer observes that this anatomical theory was conceived in obedience to the psychology of the day. In a similar way the speculations about so many centres and the fibres connecting them with one another correspond with our notions about the association of ideas, and are mainly founded upon assumptions.

Amongst his meritorious contributions to the study of the nervous system, Dr. Sommer has invented an apparatus for registering the finer movements of expression and emotion. It is these movements which the thought reader has learned to note and interpret. In nervous diseases they are often deranged or exaggerated. Dr. Sommer's apparatus may be had of the Mechaniker Schmidt in Giessen, at a price of 85 marks.

Einfluss der Rasse auf die Häufigkeit und die Formen der Geistes und Nervenkrankheiten. By Dr. med. et phil. GEORG BUSCHAN. Reprint from the *Allgemeine Med. Central-Zeitung*, 1897, No. 9 u. ff., pp. 21.

Dr. Buschan has brought his great anthropological learning to investigate the forms of nervous diseases prevalent amongst different races. Though the influence of race is difficult to disentangle from that of climate and the forms of civilisation, he has collected many interesting observations. He tells us that of all peoples the Swedes and Norwegians yield most readily to the attacks of malaria, and that the black race has an absolute immunity. This latter statement is scarcely correct. I have been assured by a trustworthy authority that in Guiana the negro is as much liable to be attacked by malarial fever as the white man, though he seems better able to resist the fevers of tropical Africa. Dr. Buschan tells us that in Norway and Denmark the prevalent form of insanity is melancholia, and amongst the Celtic races it is mania. The most striking passage in this pamphlet is where Dr. Buschan brings out in clearness and detail the great frequency of insanity amongst the Jews. From all the information which he can gather from Germany, Great Britain, Denmark, Italy, Russia, America, Siberia, and other countries, it appears that with the Jewish population mental derangement is from four to six times as common as with the Gentiles. Even in Palestine this proclivity holds good. According to Tobler almost all the Jewish women are hysterical. Diabetes is also very common amongst the Jews; but it is doubtful whether epilepsy is more common. As Ziemssen has observed, there is a neurotic strain through the whole race of Israel. Dr. Buschan does not favour the idea that this extraordinary proclivity to nervous diseases is due to heightened mental exertion, for in many parts, for example in Hungary and Poland, the Jews lead a quiet life, and yet the tendency to neuroses is still marked. May we not seek the cause in the long continued persecution which has followed this people through so many generations? Everyone knows something of the history of the Jews, but one requires to read a connected history like that of Professor Graefe to have a proper idea of the frightful sufferings and struggles which the Jews had, to maintain their existence during the middle ages. Altogether Dr. Buschan has entered upon an interesting enquiry, and we should advise him to go on making further studies.

Das Conträre Geschlechtsgefühl. Von HAVELOCK ELLIS und J. A. SYMONDS. Deutsche Original-Ausgabe, besorgt unter Mitwirkung, von Dr. HANS KURELLA. (Perverse Sexual Feeling; by Havelock Ellis and J. A. Symonds. German first edition, prepared with the collaboration of Dr. Hans Kurella.) Wigand, Leipzig. 6mk., 8vo, 308pp.

The circumstances under which this work is brought out speak for the attention which its subject has attracted of late years. The volume forms one of a series (the Library of Social Science) edited by Kurella, and to which Ferri, Ribot, and Lombroso are, or will be, contributors. The work before us is chiefly from the pen of Havelock Ellis, only one entire chapter and a few fragments having been contributed by the late John Addington Symonds. In the preface Ellis says—"During the last twenty years of my life, and, I may indeed say, from my youth up, I have regarded it as a chief part of my life-work to do my utmost towards the elucidation of the difficult problem of sexual life. In my opinion no problem presses more urgently for solution than this, and I believe that it cannot be solved unless we without hesitation bring it out into the cold, clear light of scientific investigation"—(Naturforschung).

It would perhaps be too captious to say, especially in view of the claims advanced by modern science, that the solving of problems of life is less the function of science than the investigation and establishment of facts. With the wish to discuss these topics without reserve and wholly in the scientific spirit we sympathise. It remains to see how far this wish is fulfilled.

Congenital sexual inversion is described on page 1 as sexual desire directed by a constitutional abnormality towards persons of the same sex. The author points out that young dogs and young fowl show sexual excitement towards members of the same sex. Occurring only in the young animals before the sexual passion has assumed a definite shape, this inclination tells for little. Traces of perverse practices are pointed out as occurring among many races of men. The prevalence of such practices among prisoners, soldiers, sailors, and others, who are forced to live separated from women, are pointed out, and it is said that homosexuality has been defended where it was necessary to limit the increase of population. We fail to understand what precise bearing observations of this nature have on the occurrence of con-

genital perverted sexual feeling. They rather surely go to show that the so-called homosexual customs are artificial and not natural, are in other words the products of peculiar social conditions, and where public opinion has sanctioned them are more comparable to polyandry, the couvade, and the like than to a primary instinct such as is bound up with the normal sexual feeling. The same may be said of the argument that such practices have prevailed among races notable as athletes and as warriors. It is easier to believe that the segregation of large numbers of men from association with the opposite sex led to homosexuality than that homosexuality was in any way, either causally or otherwise, necessarily connected with physical robustness or courage. In the same way it is said that homosexuality has been observed to prevail among men of letters, and Dante's well-known words are quoted, but surely the "*cherci e literati grandi*" were not "born so," and their sexual depravities, like their literary accomplishments, were acquired, being due in part to an unnatural mode of life, in part to a dangerous knowledge, and in part to mere opportunity, a number of them being, like Brunetto Latini himself, teachers of youth.*

There is a very singular tendency here, as in other works on perversion, to attribute this peculiarity to a great number of distinguished people on what will really seem to be very insufficient reasons. Thus in close connection with reference to the homosexual inclinations of various warlike races occurs a remark on the beautiful picture of friendship among brothers in arms "passing the love of woman" which is offered by David's lament over Jonathan. Michael Angelo is reckoned among the homosexual, but Symonds is quoted as pointing out that he was a man of "a physically cold temperament, very sensible of beauty of the manly type," and that he was "accustomed to analyse his feelings." On the other hand some of Walt Whitman's lucubrations seemed to point so strongly towards perversion that Symonds wrote to him for further explanation. Whitman's reply, oddly called his "only utterance on the subject," is given, and is as vigorous a denial of the sense imputed to his writings as anyone could wish. In comments which read like a surrejoinder, it is pointed out that Whitman was an instinctive emotional nature with singularly little capacity for

* Gibbon's sneer is probably more to the purpose, who tells us that the stupidest of the Cæsars, Claudius, was the only one who was irreproachable in his sexual taste.

analysis, that "manly love" occupies a prominent place in his book, and that though he was a man of great physical strength he never showed any desire to marry! But it seems likely that Walt Whitman had some notion of what he intended to say, and it might even be argued that he was led into doubtful sayings by his straightforward unsuspecting nature, just as Michael Angelo was probably led to compromising language by morbid self analysis. We do not see that the case of Paul Verlaine proves anything save the degradation to which even a man of considerable talents can reduce himself when he adds to the prostitution of his mind by every variety of filthy writing the actual practice of every vice.

Speaking of racial influence it is said "The murder and exposure of children was practised in some of the earlier Greek states by perfectly normal parents, while in England a married woman who does away with her child is almost always demonstrably ill or abnormal. Therefore I cannot admit that the homosexuality familiar in ancient Greece throws a light upon inversion as we see it in the Europe of to-day."

Nevertheless, after a brief but 'comprehensive account of the history of sexual inversion in medical literature in Chapter II., there follows Chapter III., which is entirely from the pen of the late J. A. Symonds, and which deals with homosexuality in Greece. We agree with Ellis's remark in the preface that this contribution does not throw special light on inversion as a congenital sexual abnormality. It contains, however, some interesting observations. One of these is "the absence of any trace of a recognition of pederasty in the Homeric writings." The remark of Plato, made familiar to English readers by Hume, that the gymnastic contests led to pederasty is probably true. "Plato in *The Republic* says—'A little while ago the Greeks thought, as all barbarians still do, that the sight of a naked man was indecent and ludicrous.' He mentions the Spartans and the Cretans as the originators of the custom of holding athletic contests naked." The feeling which Plato attributes to the barbarians is probably common to all primitive peoples. It existed notably among the early Jews, it exists still among bucolic populations both at home and abroad. It is obviously natural, i.e., fitting, and is apparently one of those instinctive safeguards which are lost through over-cultivation.

Symonds acutely observes that the degradation of women inclined the Greeks towards pederasty. We see the same thing in Turkey to-day. Women are secluded, their minds are a blank, they become stupid and sensual, unfit associates for men save in pleasure and regarded merely as instruments of vice. Their degradation has a far-reaching and ruinous effect in another way, for—as would appear from a recent article in *The Contemporary Review*, signed “A Turkish Patriot”—they force the minds of the children who are committed solely to their care, and a Turkish boy emerges from the harem an adept in vice at least theoretically. Conditions not dissimilar existed no doubt in Greece.

In the fourth chapter perverse sexual feeling in the male sex is considered. The author (Havelock Ellis) notices the stress laid by Dessoir, and earlier by the writer on “Sexual Perversion” in *Tuke's Dictionary*, upon the undifferentiated condition of the sexual feelings in early youth. He does not attribute the same importance as do these authors to this condition in the production of permanent perversion. He recounts in detail a large number of cases, none of which seem more conclusive than those already published by others. In most there is a history of vague sexual feelings in early childhood more easily roused by relations with the sufferer's own sex (quite a common condition at this time of life, we apprehend), subsequent masturbation, learned at school, and then disgust for women, with an inclination towards men, usually satisfied by mutual masturbation. The whole crux of the question seems to us to be whether this is or is not to be fairly called congenital sexual perversion. Is it “a sexual desire directed by a constitutional abnormality towards persons of the same sex,” or is it so directed by suggestion, by vicious education, or other external agencies?

Chapter V. deals with inversion in women. Here we have also something of a history of perversion among various races. It is noted that homosexual practices are common in prisons and asylums, the influence of school life is dwelt upon, and it is said that “the development of inversion is particularly encouraged by such occupations as cause a number of women to remain constantly together, frequently at night, without the society of men.” But a condition thus fostered can hardly be considered congenital, and this therefore seems wide of the point.

In Chapter VI. the essential nature of sexual inversion is discussed and the author's cases are analysed. In 17 out of

83 cases, the sexual feelings were precocious in their appearance; in some (exact proportion uncertain) there was sexual weakness; in 11 ($\frac{1}{3}$ of the whole) there was a distinct exciting or suggesting cause; in 18 cases out of 23 masturbation existed, though Ellis does not attribute much importance to the coexistence of this condition.

In the seventh chapter the theory of sexual inversion is dealt with. The doctrine, *Anima muliebris in corpore virili inclusa*, and its more modern version of a female brain with male sexual glands are rightly dismissed as merely unintelligible. We cannot say that the author's own suggestion, namely that the state is due to an imperfect differentiation of the sexual elements in foetal life, or a persistence of the second element presumed ordinarily to, as it were, atrophy (if we rightly apprehend him), carries us very much further. At any rate we are told that inverted sexual feeling is a sport, a variation, and that it is comparable to instinctive crime, to genius, to idiocy, or colour blindness, the condition being an anomaly and not a disease.

Three great factors are recognised as occasional or exciting causes, causes calling up a condition which would otherwise in some cases remain latent—example and the conditions of school life, seduction, and disappointment in love.

The eighth chapter contains remarks on treatment and on the various laws of different countries which bear upon inversion. With regard to the former we are glad to express entire concurrence with the opinions laid down. It needs better results than have yet been shown to justify the physician in placing himself in a position perilously like that of a procurer.

The book concludes with an appendix from various hands, including remarks on sodomy among vagabonds by Josiah Flynt, and among soldiers by Symonds.

Uranisme et Unisexualité: Etude sur différentes manifestations de l'instinct sexual. Par MARC-ANDRÉ RAFFALOVICH. Paris: Masson, 1896, 8vo, pp. 363. 8fr. (Uranisme and Unisexuality: A study of the different Manifestations of the Sexual Instinct, &c.)

Like the work last reviewed, this volume belongs to a series. It forms a portion of "the Library of Criminology," edited by Dr. A. Lacassagne, to whom the book before us is dedicated.

Lacassagne himself says, "Under the prepossession of a modesty which is out of place, these questions have been entered upon from a scientific point of view with a certain timidity. Authors, even those who consider themselves the most emancipated, fearing that they may be suspected of pornography, or of scientific impropriety, launch out with the fury of a preacher into various epithets for a vice which they designate as an abomination, a monstrosity, an infamy, and so forth, as if the really extraordinary character of these facts in all societies, in all epochs of history, should not attract to them the attention of the psychologist."

The suspicion of catering to the popular passion for pornography is one which may well make a man pause. It cannot be agreeable to any man who has his own honour, or that of his profession at heart, to think that his book has become part of the ordinary furniture of a brothel, and such we are told has been the fate of one or more medical treatises upon this subject. It must also be said, even from a natural history point of view, that the almost universal repulsion from this subject at first felt among the uncorrupted, has probably some basis other than mere hypocrisy or false modesty. All universally spread feelings are worthy of a certain respect, for it is hard to see how they can have been evoked if they were not fitting.

It is the merit of the writer whose work we are considering, that he has introduced a healthier tone into this discussion than characterises the productions of many of his predecessors.

It is very much to be feared that our notions of right and wrong, of true and false, are likely in modern days to be undermined by the excessive prominence given to pure criticism. In literature, history, and politics we have ceased to use strong and direct language, and therewith we have ceased to form definite and distinct opinions. We are so absorbed in criticism we forget judgment. The dark ages have ceased to be called dark, and every investigator luxuriates in the dim religious light, and is only eager to show that his rushlight illuminates another little bit of the scene. Philip IV. is no more cruel, Henry VIII. lascivious, Elizabeth treacherous and penurious, nor Oliver hypocritical. Nay, for were they not all interesting products of their age, persons with family histories, subjected to climatic, racial, and other modifying influences, and, of course, no more to be judged by their conduct than a glacier or any other

natural phenomenon? A writer is chiefly valued because he shows the influence of somebody, or influences somebody else. In painting, hideous and grotesque daubs, which have just the same interest in art history that the efforts of the schoolboy learning to draw have in the life history of an artist, are held more precious than the most finished effort of the most praise-compelling masters.

Now in literature and art, in the criticisms of life in the widest sense, this tendency has its dangers, as the late Sir James Stephen pointed out, but it flatters itself above all that it is scientific, and, therefore, in subjects which border upon science it asserts itself in its most vigorous form. Thus in psychology it threatens to become supreme, and a man is looked upon as no better than one of the profane who regards mind as something more than a mere bundle of sensations and resultant motions, or who sees that motives are mixed, actions obscure, and ends incalculable. To the modern vision, which regards life as a mere diorama, the successive scenes of which are to be studied and tabulated, but are much too precious to be interrupted or altered, Raffalovich's teaching will be quite a shock, for he seems to hold the doctrine, perfectly fresh among the moderns, that desire, whether normal or abnormal, is not sacred, and that restraint is a faculty of humanity quite as natural and as respectable as indulgence. He thinks that we would hear a good deal less of the troubles of the sexual pervert if there were a little more regard for chastity in the world, and that that unhappy wretch would be much more manageable if he had any religion to which we could appeal. To the modern "scientific" mind chastity itself is probably an aberration, and religion is only important as being the centre of a number of interesting myths, and yet we are afraid it must be admitted that the ideals, founded upon such notions as chastity and religion, have worked profoundly for the strengthening and elevation of human character and the improvement of the race. Be that as it may, their existence proves that they have something in human nature to which they correspond, and they can, therefore, be used to act upon the mind and to influence motives. Surely ideas of this kind, where they can be appealed to, are more likely to curb the most powerful of instincts than is the mere teaching of another form of indulgence. Raffalovich is one of the first authors who has protested against endeavouring to cure the unisexual by sending him to a prostitute. Marriage

itself, he remarks, is an indignity when it is only rendered possible by prolonged sojourns in brothels. Better to teach our patient that sex is not the pivot of the universe. A great number of people, who are perfectly normal sexually, are so placed that they cannot gratify their sexual passions, and are therefore compelled to restrain them. Why should not the pervert be placed under the same compulsion? After all, natural passion is not a sufficient excuse for vicious practices, or it might be pleaded as a defence for rape. Teach the pervert that he can no more indulge in his inclinations than an ordinary man can commit a rape. To send him to a prostitute to cure himself is radically unsound practice, because intercourse without any relation to the proper object of the sexual act, and without affection, is, strictly speaking, unnatural. The production of the sexual orgasm for the mere gratification of sense, or to test the powers, is the foundation of all sexual vice, and if it is encouraged by the physician he can scarcely expect that his patient will really accomplish self-mastery.

While we repeat with regard to this book the approval which we expressed for the author's distinctive views in commenting on his earlier treatise, we must regret some blemishes which the volume contains. We think the author, though he appears now to reside in England, has hardly taken enough trouble to understand the English point of view on certain matters. We are not concerned to defend James I. (who, by the way, was a Scot, if the difference in this connection is worth considering) nor are we ignorant of the opinion of some of his contemporaries (Lucy Hutchinson for example) as to his private life. Our author then is welcome to worry the contributor of the notice of James in the *Dictionary of National Biography* on this point, but we can hardly think that he is justified in condemning the entire "forty pompous volumes" of that work as a "monument of the indiscriminate lying which has become habitual in England." This mode of criticism lacks amenity. On the same page our author makes a funny blunder to which we should be sorry to apply a scalping knife as vigorous as his own. It appears that Mr. Michael Davitt, the well-known Home Rule Member of Parliament (*père de famille*, Raffalovich qualifies him, but he is better known in his own country as "Father of the Land League,") was summoned to give evidence before a commission on prisons. (He had been a political prisoner for seven years, and indeed his book

on his prison life is authoritative.) He was unwilling to speak of things so shocking as sodomy among prisoners. This is called "revolting modesty" and is cited as an example of "fantastic English hypocrisy"!

A little abuse of England, and incidentally of one of the most un-English men in the world is a trifle. A more serious matter is the accumulation of a great mass of references to persons who have been guilty of every form of sexual perversion and whose cases certainly appear to us to have a very doubtful bearing on any controverted point. For nobody can deny that a deal of sexual depravity has ever existed in the world and ever will. That the tendency thereto is becoming constantly more common Raffalovich believes but does not prove. The contention on which all the mass of modern literature on this subject is based, namely, that there are a considerable number of otherwise sane men, without, or with very limited desire towards the opposite sex, and with strong desire towards their own, and that this condition is constitutional and inborn, appears to us to be even still "non-proven." The evidence to convince the sceptic in this case must needs be strong, clear, and precise, and this will always be difficult to obtain. Those who claim to be victims of the condition are necessarily to a large degree tainted witnesses. The arguments that sodomy has prevailed in various countries—Greece, Rome, Hindostan, England—proves too much, yet it is always used as a sort of prop to the argument that true congenital inversion occasionally occurs. The same may be said in both respects of the contention from the habits of prisoners, etc.

The fact that any form of vice that is conceivable by man is possible to man must be borne in mind. The instincts in man do not act blindly as we believe do those of the lower animals. We are "as gods, knowing good and evil," and so we have a choice. That a certain or uncertain proportion should adopt the evil is perhaps inevitable, but the fact that this proportion varies according to climate, race, education, habits, moral atmosphere, and a hundred other influences tends to show that in no individual case is the worst choice inevitable.

One might come to the same conclusion from the remarkable sketch of "sexualities" with which Raffalovich begins his book. It is intended to include every form of sexual feeling. It contains six chief heads and nineteen minor

divisions. Thus the shades are minute. Here is one class :

“A. Congenital heterosexuality, unconquerable throughout the whole life, without unisexual relations, comprising :

(1). “Those who not only have never had sexual or sensual relations with a male, but who have never even casually, and at any moment of their lives, before or after puberty, at college, in barracks, in prison, in Africa, in Asia, or in Europe, contemplated the possibility of unisexual sensual thoughts, inclinations or feelings, and who would find, no matter what sexual or sensual act, with no matter what woman, or even solitary masturbation, more natural and more conceivable than no matter what sexual or sensual act with no matter what male.

“This is heterosexuality acquired and congenital ; it owes as much to education as to nature.”

On this we have three brief remarks to offer. First, we agree with the last clause and we think the same proposition holds good of the converse condition. Secondly, we fear that if such an individual as is here indicated were to be found in England he would very likely be charged by our Continental friends with “fantastic English hypocrisy.” Thirdly, we do not think the multiplication of histories of sexual depravities, modern and ancient, is likely in any appreciable way to increase the numbers of persons exhibiting this natural and wholesome ignorance.

Contribution a l'Etude de l'Atrophie Musculaire progressive, type Duchenne-Aran. Par le Dr. J. B. CHARCOT. Pp. 159. Planches 4. Paris: *Progrès Médical*, Bureaux. Félix Alcan.

This monograph, ostensibly on the ordinary form of progressive muscular atrophy, is really more than it pretends to be, for it contains an interesting and important classification of the various forms of muscular atrophy—spinal, peripheral, and myopathic—preceded by a history, extending over 16 pp., of the various phases of medical views in reference to muscular atrophy since the time of Duchenne. The author's point of view will probably be best appreciated by giving his classification. All forms of muscular atrophy he divides into : I. Myelopathies, II. Neuritis, III. Myopathies. The first class he subdivides into (a) Acute and (b) Chronic. Amongst the acute are : (1) Acute spinal paralysis, infantile

and adult; (2) acute central myelitis; (3) hæmatomyelia; (4) subacute anterior poliomyelitis. The chronic atrophies which he enumerates are: (1) The Duchenne-Aran type of progressive muscular atrophy; (2) labio-glosso-laryngeal paralysis, both of these varieties being also termed *protopathic*, as indicating that the affection of spinal and bulbar cells respectively is a primary process, and not secondary to an affection of other structures as it is said to be in the so-called *deuteropathic* affections. In this class of *deuteropathic* affections are included: (1) Amyotrophic lateral sclerosis; (2) cervical pachymeningitis; (3) syringomyelia; (4) muscular atrophy occurring in tabes; (5) some types of central myelitis; (6) intra spinal tumours; and (7) disseminated sclerosis, although in the last mentioned condition muscular atrophy is extremely rare. In the second chief division, comprising all cases of neuritis, he subdivides these into: (1) The infective form, due to diphtheria, typhoid fever, beri-beri, syphilis, or tubercle; (2) the toxic form, from lead, arsenic, mercury, etc.; (3) a spontaneous form, from excessive cold, etc; (4) a cachectic form, due to anæmia, cancer, or diabetes; and (5) sensory neuritis, as in tabes and neuro-tabes. The third chief division, or myopathies, he divides into: (1) Pseudohypertrophic paralysis; (2) Erb's juvenile form; (3) Duchenne's infantile form; (4) the hereditary form of Leyden and Möbius; (5) the scapulo humeral type of Zimmerlin; and (6) the femoro-tibial type of Eichhorst.

The chief controversial topic in the book naturally is concerned with the question whether there is such a thing as a *deuteropathic* form of progressive muscular atrophy. That there was such a condition was maintained by the elder Charcot, and he regarded cases of so-called amyotrophic lateral sclerosis as illustrating an affection of anterior horns and consequently of muscles, secondary to an earlier affection of lateral columns. The opposition to such a view has been headed by Gowers, who stoutly maintains that what is called amyotrophic lateral sclerosis and progressive muscular atrophy are one and the same thing, and that as a matter of fact he believes, and so far he knows of no pathological fact to the contrary, that lateral sclerosis occurs in every case of progressive muscular atrophy. The truth probably is that in such cases there probably is a gradation, so that at one end of the series we have cases of muscular atrophy with little if any evidence of lateral sclerosis; and at the other end

of the series cases in which the symptoms of lateral sclerosis predominate, and in which the symptoms of the anterior horn affection are almost entirely in abeyance.

We think it might have been better if an attempt had been made to classify the myopathies more succinctly. In view of Erb's recent monograph there seems now little doubt that pseudohypertrophic paralysis, Erb's juvenile type of muscular atrophy, and Duchenne's infantile form (identical with the facio-scapulo humeral type of Landouzy and Dejerine) are all phases of one disease, and it may be that some other types also would be more conveniently described as cases of different forms of muscular dystrophy.

The book is an interesting one, and it is comprehensive in its classification. It has also the lucidity which we now naturally expect in French neurological works. The plates are extremely good, and if there is nothing that is absolutely new in the work it has the merit of presenting familiar and unfamiliar facts and problems in a manner which cannot fail to interest the reader.

The Pathology of the Blood in the Insane. By WM. H. HARRISON, M.D., Pathologist of the State Lunatic Hospital, Harrisburg.

We have before us a reprint from *Transactions of the Medical Society of the State of Pennsylvania*, 1896, on the "Pathology of the Blood in the Insane," by Wm. H. Harrison, M.D., Pathologist of the State Lunatic Hospital, Harrisburg. Much has previously been written on this subject, one of the first accurate workers in this field being Lander Lindsay. He came to the conclusion, after careful investigation, that there was no condition of blood peculiar to the insane. That the quantity and quality of blood can alter mentalisation is an established fact; the irritability of gout, the melancholia of chronic jaundice, the delirium of fevers, etc., being well-known examples. Although Dr. Harrison's paper establishes nothing new, it throws several new lights on the subject, and impresses on us the vast importance of attention to the condition of the blood in our treatment of the insane.

He pleads for the necessity of regular examination of the blood, whereby we may be guided in our dietary, and medical and hygienic treatment of the insane. In mania there was usually oligocythæmia, according to deterioration

of physical health. At first there may be polycythæmia, due to secretive activity and to energetic action of the emunctories, and, as a consequence, a rapid drain of water and an increase of hæmoglobin, red and white cells, and blood plaques in proportion. This reminds us of the algid stage of cholera. In an exhausted maniac the number of red cells per c.m.m. was 8,000,000, and on a liberal supply of water being given at frequent intervals, in about ten hours there was a reduction of red cells to 4,000,000. In some cases of mania, after ample diet and fluids, the red cells were greatly increased above normal. Dr. Harrison here asks:—"Cannot we infer from experience that exaltation extends to the red cell-making power and that of the plaques? And is there not a corresponding increase of reproduction in the amœboids?" We forbear answering these speculative questions. In melancholia the diminution of red cells was greater than in mania. "The profounder the melancholia the greater the diminution, as in the hyperacute." In dementia also, oligocythæmia was the rule. In a case at Kirkbride's Hospital it was as low as 918,000. In many cases of secondary dementia, however, the diminution was slight; many of them increasing in weight and becoming well nourished, with hæmoglobin, though below normal, of a pretty fair figure. An interesting fact brought out was that the disproportion of red to white cells and to the blood plaques was more common in dementia than in acute exaltation or depression, although it is even uncommon in demented. During and immediately following convulsions in epilepsy in many cases there was an increase of cellular elements, and after some hours a corresponding diminution. At Kirkbride's Hospital a paretic, well nourished, but having ataxia of limbs and speech and delusions of grandeur, after finishing a creditable "home run" in a game of base-ball, developed the remarkable increase of 8,741,207. Microcytes, macrocytes, and in some cases poikilocytes, were seen frequently, also in others a remarkable degree of leucocytosis was found. The paper is extremely interesting although some of its statements must be received with considerable reserve. In view of the increasing importance of the chemistry of the brain in insanity, a field so neglected in this country, some investigations with regard to the chemistry of the blood in insanity would be of great interest.

On the Plans of Modern Asylums for the Insane Poor. (With four Plans). By JOHN SIBBALD, M.D., Commissioner in Lunacy for Scotland. Edinburgh: Turner and Co., 1897. 8vo, pp. 33.

Dr. Sibbald's pamphlet is a succinct and able *résumé* of modern advance in asylum construction. It was prepared for the recently constituted Edinburgh Lunacy District, but it is of general interest, and will be found generally useful. After a few general remarks the author describes the plans which he has selected in detail. First the Derby County Asylum, opened in 1851, is dealt with, as representing the views of Dr. Conolly. Following on this there is a description of the Barony Asylum, opened in 1875. The marked difference between these two is explained in a terse and explicit style. Thereafter the newly-opened City of Glasgow Asylum at Gartloch is selected to illustrate the principle of construction which has been recently growing in favour among asylum authorities in Scotland. It is a remarkable development of the newer differentiation in the arrangements for the care and treatment of the insane. The main building is similar to previous asylums, but the separate hospital is designed for the reception of the newly-admitted, for the treatment of the sick, and for the observation and management of cases requiring special care. The main principle may be briefly stated in that there are two classes of the insane—one requiring constant medical care and nursing, and one for which that is (in the more restricted sense of the word) ordinarily unnecessary. As this pamphlet is so important and so easily procurable, we need not enter into the arguments and opinions which Dr. Sibbald has adduced. An adequate notice of these would mean a transcription of the greater part of what he has written. Nor shall we refer at length to his appreciation of the asylum at Alt Scherbitz, which is now becoming as well known as Gheel. Although Dr. Sibbald has written in the interests of a particular district, to inform those in authority as to recent progress in this department, his work should be widely circulated, and those who are charged with the responsibility of erecting additions to existing institutions, or new asylums, should weigh well what he has thus placed on record.

NOTES ON BOOKS.

Clinical Lectures on Mental Diseases. By T. S. CLOUSTON, M.D.
Fourth Edition. London: J. and A. Churchill. 1896. 8vo, pp.
740. (With 15 plates). Price 14s.

It is unnecessary to review a volume which is so well known. We congratulate Dr. Clouston on having attained the fourth edition of a book which maintains its importance as a clinical and practical work. His well-reported and informing cases of mental disease are of special value, and the student will find that care has been taken to record the progress of psychological medicine during the four years which have elapsed since the third edition was published. Dr. W. F. Robertson has prepared three new plates, which admirably illustrate the most recent pathological findings, and the literary interpolations have not in any way detracted from the value of the work as one which is eminently readable in manner and matter.

Diseases of the Spinal Cord (with 170 illustrations). By BYRON BRAMWELL, M.D. Edinburgh: W. F. Clay. 1895. Third Edition. 8vo, pp. 659. Price 16s.

Dr. Bramwell has issued a third edition of his well-known work in a greatly extended form. It has been entirely re-written and re-arranged in lecture fashion. A large number of new illustrations have been added, and the general introductory chapters are reduced to about thirty pages. The space thus gained is occupied by valuable elucidation of special pathology and therapeutics. In fact the work is a mine of information to the practitioner, for it is a series of exhaustive studies of clinical and pathological facts. We commend it to our readers as an indispensable work of reference by a man of original and masterly thought.

Clinical Lectures on Diseases of the Nervous System. By W. R. GOWERS, M.D. London: J. and A. Churchill. 1895. 8vo, pp. 279. Price 7s. 6d.

This book contains twenty lectures which were delivered at the National Hospital for the Paralysed and Epileptic, and are mainly reprinted from various English medical journals. Dr. Gowers' eminent position as a neurologist is assured, and these lectures have done much to increase his reputation as a great clinical teacher. We need not enter upon a review of the substance of what is here set forth. All Dr. Gowers' writings deserve our closest study, and should find a place on the shelves of every asylum library. We may, however, instance the lectures on syphilitic hemiplegia and bulbar paralysis as of special interest to our readers.

Leitfaden der Physiologischen Psychologie. By Professor TH. ZIEHEN. Dritte Auflage. Jena: G. Fischer. 1896. Pp. 238.

In the second edition of Professor Ziehen's well-known book there was a new chapter on the emotions and ideational feeling-tone. In this third edition there is little new beyond changes and additions suggested by recent literature. The general plan of the book is unaltered, and it is characterised by the special attention paid to those parts of the subject which stand in relation to mental pathology.

Cosmic Ethics, a Mathematical Theory of Evolution. By W. CAVE THOMAS, F.S.S. Pp. 22 and 296. Price 10s. 6d. London: Smith, Elder and Co., 1896.

Most old doctrines are republished every few years. It is not surprising therefore that the writer of *Cosmic Ethics* should proclaim the golden mean as the key to all science. The book, however, in spite of its claim to be a mathematical theory of evolution, supplies nothing new in support of a theory now generally regarded as exploded.

Obviously the quantity of most things lies somewhere between something and something else; but to determine two extremes and a law of position between them is a roundabout method of finding it. The more useful way of looking at the fact is that things require a quantitative adaptation to environment, and that they may fail in this by excess or defect. The point of adjustment may of course be called the "mean," but the term is generally inappropriate and sometimes quite misleading. The fault of some books, for example, is not that they are too long or too short, but that they are written at all!

Die Autonomie der Moral mit besonderer Berücksichtigung der Morallehre Immanuel Kants. By KR. BIRCH REICHENWALD AARS, of Kristiania. Leipzig: Leopold Voss, 1896. Pp. 123. Price M. 2.

This is a clear and painstaking little work in two parts. It shows the sovereignty of reason in the sphere of morals, which, according to the author, demonstrates the true nature and only possible proof of liberty, the power which man has, as possessed of reason, to give law to himself. The volume has many references to modern psychology and ethics, and the notes interpolated in the text must prove of much value to German readers of Kant.

Die Freiheitslehre bei Kant und Schopenhauer. By Dr. DAVID NEUMARK. Leipzig: Leopold Voss, 1896. Pp. 90. Price M. 2.

This is an attempt to harmonise the subjective and the objective, and to bring these into a common bond of connection through mental activity. It dwells upon the two problems of free will

and realism, which have puzzled philosophers and originated schools. It refers to the Pantheism of Spinoza on the one hand and the vindication of free will by the Liebnitzians and Wolffians on the other. The mysticism of Schopenhauer and the theology and the ethical problems of Kant, make an interesting volume in the light of contemporary German psychology.

The Art of Cooking for Invalids. By FLORENCE B. JACK. Edinburgh: J. C. and E. C. Jack, 1896. 8vo, pp. 185. Price 2s.

In this book the author may be said to have succeeded in her object of laying down a scheme of invalid cookery for home and hospital use. The various recipes are grouped into chapters which in some measure follow each other in a natural sequence depending on the progress of the patient through convalescence to complete recovery.

The first chapter, dealing with soups, etc., contains twenty-five recipes. The preparation of beef tea, which is a test of sick-room cookery, occupies the author's attention first. A very clear account is given of the principles that underlie the extraction of the meat juice, and the stimulating properties of beef tea are very properly emphasised in contrast to its nourishing qualities. The first method, lasting three hours, is sufficiently scientific, but we fancy most nurses will prefer the second and more rapid way. Many patients also relish beef tea more when made by the ready method. In this chapter there is also a recipe for rabbit soup which will commend itself to all invalid cooks. It is perhaps rather elaborate. Very good rabbit soup can be made in less than 5 to 6 hours. If the rabbits are young it is enjoyed by the convalescent as much as chicken broth. The chapters dealing with fish and meat suitable for the invalid, contain a large selection of dishes, all delicately prepared and easy of digestion.

The chapter on meats may be taken as a type of the others. There is a preface containing a few practical hints on the relative value of different meats from an invalid's point of view and on the best methods of cooking.

The author does not make the mistake of taking anything for granted. This practical information is a feature of the book. The smallest points are noticed, and the essentials of cooking are the details. Twenty-two pages are devoted to the preparation of various drinks for the invalid, and minute directions are given for making tea and coffee.

Chapter IX. deals with peptonised foods, without a notice of which no invalid scheme of cooking can be considered complete nowadays. The author depends entirely on Benger's Liquor

Pancreaticus. For home use, perhaps the Zymonising powders of Fairchild are in many cases preferable.

A chapter on poultices, etc., is followed by an appendix, where many accessory operations necessary to the proper preparation of food are described. The book is an excellent one and is characterised by great orderliness, scientific accuracy, clearness of detail, and terse description.

The letterpress is good, and the important points in each recipe—materials, time, and probable cost—are thrown into relief by heavier type.

Some Prolegomena to a Philosophy of Medicine. By GILES F. GOLDSBROUGH, M.D. London: John Ball and Sons. Price 3s. 6d. net.

This book, the title of which is decidedly ambitious, consists of an expansion of the presidential address to the British Homœopathic Society, delivered in 1895. In Chapters I. and II. we find arguments in favour of the scientific training of the student of medicine, and of the scientific attitude of mind on the part of the practitioner, which have our cordial concurrence. Chapter III. is headed "A Bio-Dynamic Law," and discusses the phenomena of life as a mode of energy, and, incidentally, physiological psychology. In the inferences from Bio-Dynamic Law (the subject of Chapter IV.) there is much that we are unable to follow, not having been initiated into the Hahnemannian mysteries, and we cannot help thinking, with every respect for the learning displayed by the author, that expectant faith rather than true scientific induction is to be held responsible for some of the conclusions arrived at, especially with regard to the science of pharmacology. In conclusion we note with satisfaction that Dr. Goldsborough lays stress upon the importance of observing mental states in their relation to the symptoms of disease, and gives some interesting illustrations from practice.

Moral Pathology. By ARTHUR E. GILES, M.D., B.Sc. London: Swan, Sonnenschein, and Co., 1895. Pp. 179.

Dr. Giles has written a book treating of the pathology of morals, when their physiology is not yet understood, nor any standard, of general acceptance, yet established.

How are we to measure morals? Where is the standard rod for universal comparison? "Ought" is not a constant, but varies with the latitude and longitude. We cannot determine its prime meridian, nor fix its equatorial line "twixt right and wrong." We cannot even draw *iso-moral* lines, or lines of like morality, on the map.

Mr. Tylor, in his *Primitive Culture*, says, "Morality or ethics signifies the act of conforming to the manners of the society to which we belong." There are not two races in the world which

have exactly the same code of morality. In England we use the decalogue, more or less, as a standard, and, with our usual insular presumption, expect everyone else to do the same. We think it wrong to steal, or to work on the Sabbath day. We set aside certain square inches of our bodies to be covered as shameful, certain square yards of our land to be considered sacred, and certain square hours (so to speak) of our time to be passed in atoning for the evil done during the time not so apportioned.

A few degrees of east longitude completely alter the aspect of affairs as regards Sunday and Sanctity, and we find the Parisian world so latitudinarian as to take pleasure in horse-racing on the Sabbath.

"When the promptings of conscience are habitually yielded to, the individual's condition is one of moral health," says Dr. Giles. "Conscience," says Burton, "does not exist in Eastern Africa," and "repentance" expresses regret for missed opportunities of moral crime. Robbery constitutes an honourable man; murder—the more atrocious the midnight crime the better—makes the hero; and so on.

From the foregoing, it is manifest that Dr. Giles must re-name his book, and call it the Pathology of *English* Morality, or otherwise limit its title geographically. Meanwhile it would be profitless to review the work more in detail.

Hypnotism, Mesmerism, and the New Witchcraft. By ERNEST HART. New edition enlarged. 24 illustrations. London: Smith, Elder & Co., 1896. Sm. 8vo, pp. 212. Price 5s.

Mr. Hart's little book having been out of print for some time, it became necessary to republish it to satisfy the public demand. The substance of the work was originally reprinted from articles in the *Nineteenth Century* and the *British Medical Journal*, and the present edition is unchanged except that a chapter has been added embodying the confessions of a professional medium, and some new matter has been placed in the appendix. Mr. Hart's strong opinions are well known to those interested in hypnotism, and he does not abate his unqualified condemnation in his last pronouncement. His conviction is that when hypnotism is not a pernicious fraud it is a mere futility, and in arriving at that conclusion his style is as lively and incisive as ever.

Album d'Aliénés. By Professor P. I. KOVALEVSKY. Varsovie, 1896. 16mo, pp. 63.

This little collection of photographs of insane patients is presented without comment by Professor Kovalevsky. In a prefatory note he claims that the utility of such portraits is incontestable, and states his intention of issuing further instalments of his collection from time to time. The photographs have been taken by his colleagues, and are reproduced in a poor style. We note that the effect

is heightened in many cases by eccentric clothing and untrimmed hair, just as the theatre insists on straws as the recognised head-gear for Ophelia. These photographic representations are of comparatively little use, while no standard of size is fixed. It is important, too, that there should be a full-face and profile representation for each case.

La Cause Première d'Après les Données Expérimentales. Par EMILE FERRIÈRE. Paris: Alcan, 1897. Pp. 462. Price 3fr. 50.

This volume is mainly a somewhat dry and bald account of the "plan of creation" in the vegetable and animal kingdoms, set in a metaphysical frame. The author has mostly gone for his facts to evolutionary authors of authority, and has sought inspiration in Claude Bernard's *Introduction à la Médecine Expérimentale*, "the real gospel of contemporary science." The parade of metaphysical phraseology in the early and concluding chapters of the book is probably due to the fact that the book is largely intended for the instruction of "professional philosophers" who, it appears, are helpless and intimidated by the authority of science, and are seeking for light, which, the author seems to assume, they will gladly recognise in this second-hand summary. The exact value and usefulness of the book may thus be left to the "professional philosophers" themselves to determine.

PART III.—PSYCHOLOGICAL RETROSPECT.

THERAPEUTIC RETROSPECT.

By Harrington Sainsbury, M.D.

Naturally the animal extracts are at the present moment very prominent in the domain of therapeutics, and as naturally the thyroid extract, the powers of which have been so amply demonstrated in myxœdema and cretinism, comes in for special consideration. To the readers of this Journal the subject must have considerable interest, not only because the affections just mentioned have an interesting psychological aspect, but also because the thyroid extract has been employed in various mental affections, with, it is claimed, encouraging results.

Admitting the activity of thyroid preparations, the next step has been to determine if possible the nature of the active principles contained in the gland, and upon this subject several investigators are at the present moment at work.

E. Baumann, in 1895, discovered the presence of iodine in the thyroid gland (see Merck's Annual Report, 1897). The iodine is in organic combination, and Baumann has been able to separate an organic iodine compound, to which he has given the name of

iodothyrene. It exists, he says, in the normal thyroid. Iodothyrene is capable, according to the same observer, of doing duty for the gland in cases where this latter has been removed or has been destroyed by disease—it is, in fact, the active principle. Iodothyrene has received a good deal of attention from physiologists (see Merck, *op. cit.*), and it has also been tried therapeutically in the same group of affections in which thyroid preparations have proved efficacious, e.g., myxœdema, skin affections, obesity, etc. In cases of myxœdema it is recommended that the dosage should commence at 5 to 8 grains, pro die, and be gradually increased up to 16 to 48 grains, the total daily dose. In skin affections and obesity the dosage daily is for adults 16 to 48 grains, for children 5 to 16 grains, and in these and other affections there does not seem to be the same need for the cautious beginnings which myxœdema requires.

More recently S. Fraenkel (*Therapeutische Monatshefte*, July, 1896) disputes with Baumann the nature of the active principle. He denies the virtue of the proteid iodine compound which Baumann was able to precipitate by means of acetic acid and heat, and asserts that the active principle, named by him thyreo-antitoxin, is of the nature of a base, and is probably allied to guanidine. It is, he says, identical with the base which Drechsel was able to separate by phospho-tungstic acid. The question must be decided clinically as to which of these two substances really represents the activities of the gland. It is interesting to note that R. Hutchinson in this country has extracted a colloid body from the thyroid, which contains iodine and acts like the gland itself. We may draw special attention to the presence of iodine in the thyroid. This is noteworthy, seeing the powerful *alterative* action of this gland, such action being characteristic of iodine and iodides.

Dr. J. P. Busch, of the German Hospital, London, reports on the use of thyroid tabloids on a large scale, and the infrequent arising of symptoms of intolerance (thyroidismus). Of 68 cases, in which altogether over 10,000 tabloids were administered, symptoms of overdose arose in only four. The other 64 patients (women) took from 3-10 tabloids daily, during periods extending often over two or more months without any bad symptoms. Dr. Busch holds accordingly that the usual dosage may be considerably raised without mishap. From the report in the *Therapeutische Monatshefte*, October, 1896, we do not gather the general nature of the cases treated, though they were evidently not confined to one class of disease, and included cases of Graves's disease and of eczema and psoriasis; it is especially in myxœdema that susceptibility and intolerance are so marked. Nor do we gather the strength of the tabloids, which some firms supply in at least two strengths.

Dr. H. Huchard recommends that the thyroid gland used

medicinally should be always taken from the sheep, on account of the absence of tuberculosis in this animal. (See *American Journ. of Medical Sciences*, August, 1896.)

In the *Glasgow Med. Journal* Dr. R. M. Stewart reports from the *Archives de Neurologie*, Jan., 1896, a case of myxœdematous idiocy treated by thyroid injection. The case was under Dr. Bourneville, and the treatment was effectual in the usual way in the removal of the physical symptoms of the myxœdematous state; in addition the mental record showed fits of temper replacing torpor, also more spontaneity. The hebétude disappeared, and the countenance became more alert and expressive; the aptitude for school work increased.

On the Treatment of Graves's Disease by means of Thymus Gland. By Hector Mackenzie, *American Journal of Med. Sciences*, February, 1897.—Dr. Mackenzie has already done such good work on the value of thyroid feeding in myxœdema that we are glad to have contributions from him on a subject so perplexing as the treatment of Graves's disease. This affection—one of the opprobria medicinæ—has recently been treated by means of the thymus gland, and to 15 cases of such treatment which Dr. Mackenzie has been able to collect he adds 20 cases of his own. Previously to trying thymus gland he states that he had tried the effect of thyroid and several other animal tissues in this disease, and that he had not tried thymus because this gland “is frequently found to be persistent in fatal cases.” Wisely he does not begin with the explanation of why the thymus is, or should be, valuable in Graves's disease, but contents himself with the enquiry—is it of value? After careful examination he arrives at the conclusion that it possesses “no specific action in Graves's disease,” failing in most of his cases to reduce the cardiac hurry, the exophthalmos, and the size of the goitre. He looks upon it as of some value in improving the general condition, and holds that in this way it may assist towards the recovery of the patient; he would place it “in the same class of remedies as cod-liver oil.” Dr. Mackenzie worked with doses of thymus varying from several ounces to ten or fifteen grains *per diem*. The cases treated by the large doses seemed to do neither better nor worse than those treated with small doses. He worked with the thymus both of the calf and the lamb, but cannot say anything definite as to their relative value. He makes the important negative statement:—“In no case did it produce any unfavourable symptoms.” This may be remembered in contrast to the potent, sometimes dangerous effects of thyroid.

Graves's disease is often accompanied by important mental changes, thus extreme restlessness, irritability, failure of memory, and an inability to think consecutively, a “chorea of ideas.” These, according to Dr. Maude (*Journ. of Ment. Sciences*, January, 1896), are frequent accompaniments, and these, apart from the

essentially nervous character of the symptoms of the disease, justify its therapeutic consideration here.

The Treatment of Syphilis by the Injections of Syphilitic Antitoxine.—In the April number of the *Glasgow Medical Journal*, 1896, a case of syphilis is reported which rapidly improved under the use of injections of serum obtained from another patient, the subject of well-marked syphilis. The former patient, a man aged 22, received, in the 8th week from contagion, $\frac{1}{2}$ c.c. of serum. This dose was increased till 5 c.c. were injected at one dose. The injections were given on an average every second day. In all $35\frac{1}{2}$ c.c. of serum were injected. The case was under the care of Dr. McCall Anderson.

The practice is of course thoroughly logical in that it follows on the lines of the diphtheria and other infectious disease treatment by the use of serum obtained from protected animals. Reference is made to the article by Mr. Cotterell in the *British Journal of Dermatology*, November, 1895.

The treatment of syphilis concerns all departments of medicine. This method, however, must be very cautiously received, in respect of the disease in question, and very conclusive evidence required as to its efficacy. I can find no reference to the subject in Sternberg's treatise *On Immunity and Serum Therapy*.

The Treatment of Tubercle.—This also concerns us all, and it is of interest to note that in the November number of the *Glasgow Medical Journal*, 1896, Dr. Springthorpe, of Melbourne, pleads for a reintroduction of tuberculin, both for diagnostic and for therapeutic purposes. This plea he makes on the results of five years' continuous use of tuberculin. Without discussing Dr. Springthorpe's teaching as to a treatment which has so generally ceased to exist, we may refer to the yet more interesting pronouncement of Koch himself on certain new tuberculin preparations which he has prepared from dried and finely pulverised cultures of tubercle bacilli. Into the technique of the mode of preparation, as also into the theory and practice, dosage, etc., we cannot enter here, but must refer our readers to the article by Prof. Koch in the *Deutsche Medicinische Wochenschrift*, No. 14, 1897. Koch claims for his new preparation, T. R., that it does not cause the febrile reaction which the older tuberculin caused.

Suprarenal Capsules, Extracts of.—A considerable body of work has been done both in the way of morbid anatomy and of physiology in respect of the functions, normal and perverted, of these glands. The more recent work of Oliver and Schäfer with extracts of suprarenal tissue indicate that the medulla of the gland is the part which contains the active principles; that these latter are of the nature of a true secretion intended for absorption, and essential to the economy; that suprarenal extract has an action upon the vascular system which is almost the opposite of the action of thyroid extract, for whereas this latter is a marked vascular

depressant, the former produces a great rise in blood pressure, the result of arterial constriction.

As is well known, there is in the functional inadequacy of the capsules present in Addison's disease a profound prostration general and vascular, a true and specific "neurasthenia," and the most natural immediate application of the above knowledge has been the administration of suprarenal extracts in this disease. The treatment is strictly isopathic, and, on the face of it, is quite as reasonable as the use of thyroid extract in myxœdema; but thus far, though tried by several observers, it has not yielded very positive results. An amelioration in the condition of the patient has been recorded by Oliver, Sansom, Lloyd Jones, Rolleston, and others, but the results have been temporary, and in the hands of some other observers the extract has failed. Doubtless success or failure will depend very much upon dosage, and this cannot be said to have been determined yet. Rolleston advises that the dose should be not less than the equivalent of 45 grains of gland in the 24 hours, or rather, he says, this dose "is certainly not too much" (*Goulstonian Lectures*, 1895). Drs. Ringer and Phear in their case (*Clinical Soc. Transactions*, 1896) began with this dose and advanced it up to the equivalent of a quarter of an ounce of gland tissue, pro die, in divided doses. Improvement followed in the general strength and appearance, and the pigmentation lessened, but there was no increased vascular tone, and after some four weeks or so the patient relapsed. During the whole period of increased physical and mental vigour the weight fell steadily. The patient succumbed ultimately.

Further investigations are needed in this affection, and also as to the value of suprarenal extract in other conditions dependent upon the loss of vaso-motor tone, e.g., at the menopause, in neurasthenia, Graves's disease, etc., as suggested by Dr. Oliver. (See also Merck's Reports, 1896, 1897).

Use of Ovarian Extract or of the Dried and Powdered Gland.—If we take into consideration the important part which affections of the generative organs play in psychological disturbances in women we shall be ready to admit the possible sphere of usefulness which serum therapy may afford. Acting upon the principle of isopathy it has accordingly been proposed in cases of amenorrhœa, natural or the result of operative procedure, to administer preparations of ovarian gland. Merck prepares such in the form of a dried powder, which may be given either in pill or tabloid form. Each tabloid or pill contains two grains of dried gland, and two or three such doses may be administered thrice daily. In this country tabloids containing five grains each may be obtained from the leading firms (their own preparation), or Merck's preparations may be obtained through them. In the *Therap. Monatshefte* for August, 1896, Dr. Richard Mond records nine cases of natural amenorrhœa, and two of operative amenorrhœa (total extirpation

of the uterus; removal of the uterus and the appendages), in all of which ovariin (Merck's) was administered, one tabloid four or five times daily. The troubles present, viz., flushings and perspirations, occipital sense of pressure or other forms of headache, insomnia, depression of spirits, palpitation, etc., these all were decidedly relieved.

Of by-effects attributable to the ovariin there were only an occasional oppression at the epigastrium, and sometimes frequent eructations. These occurred at the commencement of the treatment.

According to Merck (Report for 1897) Mond's observations have been confirmed by Chrobak, Graß, Mainzer, and others. Merck says, *loc. cit.*, by this means "it was possible to repress for a longer or shorter period, in many cases even permanently, all the symptoms of sympathetic neurosis." The drug, then, is indicated, stated generally, in the climacteric molimina. Chlorosis, so often associated with menstrual disorders, has been successfully treated with ovarian extract according to Fedeli, and Spillmann and Etienne (see Merck).

Dr. Féré, of Paris, reports (*Journal des Connaiss. Med.*, November, 1895) on the treatment of epilepsy by belladonna. He thus revives a practice of the last century. He employs an extract in pill form, commencing his dosage at about $\frac{1}{2}$ grain, and increasing the dose at intervals of every four weeks. In this way he was enabled to raise the dose gradually up to 12 grains even without any bad consequences, though he also found by experience that intolerance might suddenly manifest itself as the result of emotional disturbance. Dr. Féré made these investigations upon patients who had resisted other treatments. His results were in general negative, confirming thus the judgment of those who had abandoned the drug; of 24 patients seven only showed slight improvement. On the other hand the signal success which attended this method in the case of a man who suffered from impulsive outbreaks and paroxysmal attacks of vertigo, indicates that we may give belladonna a trial failing other methods (*Therapeutische Monatsh.*, July, 1896).

Dr. Zabłudowski, of Berlin, records (*Therap. Monatsh.*, December, 1896) a case of Friedreich's disease, interesting both because of the youthful age of the patient, a girl of nine years, as also because of the successful treatment of the case by massage. The patient was seen by Prof. Mendel in consultation with Dr. Zabłudowski, and the great improvement which a four weeks' course of massage effected was witnessed by both. The child now falls seldom, and takes her course without deviations, nor does she let things fall out of her hands as formerly. In fact the chorea-like movements are now scarcely to be remarked, and sleep is quiet.

Results and Principles of the Treatment of Tabetic Ataxy by Practised Movements. By Dr. Frenkel, in Heiden (Schweiz).—The

author points out that the purpose and object of this treatment has been much misunderstood, for whereas in tabes the muscles are perfectly contractile and neither atrophic nor shortened, it is often worse than useless to order gymnastic exercises, active or passive. The nutrition of the muscle is not at fault, and it is not muscular contractions which are wanted, but co-ordination, *i.e.*, orderly and combined movements. Accordingly the principle of the treatment now in question is the exercise of the will in controlling and ordering of the muscles to effect a given movement, say the seizing of a swinging ball. By the repetition of the attempted, though perhaps unsuccessful first efforts, the movements gain in precision and the ataxy is overcome.

The purposelessness of the gymnastic exercises as usually ordered is not a mere contraindication by negation, but there is involved also a positive danger, for not infrequently the incitement to increased muscular exertion leads to exhaustion, and the danger of this is the greater that the patient is not possessed of the usual sense of fatigue which guides us in health. This, perhaps, holds especially for the resisted movements. In all forms of activity, however, great supervision is needed, and riding and bicycling even in the earliest stages are to be forbidden, and even walking exercise is to be well controlled (*Therap. Monatsh.*, March, 1897).

Is Trional an Efficient Hypnotic, and does it possess advantages over Sulphonal?—In answer to this question Prof. J. von Mering contributes a valuable article to the *Therap. Monatsh.*, August, 1896. From the time when chloral hydrate reigned supreme he traces the further development of hypnotics in the endeavour to discover the ideal soporific which shall have no vice of any kind. Von Mering, by the bye, does not believe in this variety of the philosopher's stone, and we are inclined to agree with him. The first substitute for chloral hydrate was Cervello's paraldehyde, then came amylene hydrate, which V. Mering himself brought forward; these two it may be remarked are still to be reckoned among the most reliable hypnotics, and in particular are most valuable in feeble states of the circulation, because of their slight depressant action upon this system. Their evil taste has stood in the way of their advancement.

The endeavour next followed to do away with the objectionable qualities of chloral by combining it with other bodies, hence came chloralamide, etc. At this stage the discovery of sulphonal interrupted progress along the lines of chloral combinations and monopolised attention. A number of serious symptoms, some fatal results even, having followed the indiscriminate dosage with sulphonal, which was adopted on a very extensive scale, attention was now drawn to some of the drawbacks to sulphonal use, and amongst these, in particular, to the tendency which sulphonal showed to accumulate in the system; also to the slowness with

which the hypnosis would set in, and the occasional manifestation of delayed action.

The closely allied bodies, trional and tetronal, were accordingly investigated to discover if by chance they gave more favourable results, and at this stage we now are.

Trional has received more attention than tetronal, and a large body of evidence has been gained in favour of it. V. Mering quotes a long list of authorities, and to amplify this part of the evidence he has written to a number of nerve specialists and alienists for their experience. A formidable array of names, including V. Noorden, Lilienfeld, Jastrowitz, Fuerstner, Binswanger, Krafft-Ebing, Rabow, and others, follows, and with scarcely an exception all the above named, and unnamed, report of trional that no hypnotic is to be preferred to it, and one authority only regards it as equalled by sulphonal, though even this observer admits that the latter must be used in larger dose.

Since the introduction of trional there have been in all some six cases only of poisonous action, a result very satisfactory considering the extensive use of the drug. The harmful effects have much resembled those which are observed in the case of sulphonal poisoning, and they have included hæmatoporphyria, but it would seem that this change in the urine is sometimes witnessed quite independently of drug administration, and there are those who argue that the record of hæmatoporphyria in trional dosage is not necessarily attributable to the drug. The same reasoning would of course apply to the sulphonal cases in which the symptom has been observed.

The conclusions advanced by V. Mering are:—That trional is an excellent soporific, surpassed by none of the hypnotics; that it acts with certainty and promptness in simple agrypnia, also in the sleeplessness of the several forms of neurasthenia, and likewise in the insomnia of the psychoses, even when associated with much restlessness or excitement; that in the sleeplessness of painful states trional may be advantageously combined with a small dose of morphine, *e.g.*, 15·5 grains of trional with $\frac{1}{4}$ grain of morphine (this recommendation of V. Noorden, Krafft-Ebing, and Svetlin is also supported by V. Mering); that trional is without harmful effect upon the alimentary tract, and that the kidneys do not suffer; that cardiac patients have received it without detriment, and that the blood is not appreciably affected.

The dosage of trional is on a lower level than that of sulphonal, and should not exceed, with very rare exceptions, 1·5 grammes (some 23 grains); and in the majority of cases V. Mering recommends 1 gramme (15 grains) as sufficient. This amount, which represents the total daily quantity, should be given in one dose, and should not be continued daily for any length of time, but should, where it is necessary to maintain the hypnotic action, be alternated with other drugs, *e.g.*, amylenehydrate, chloralhydrate, or chloralamide.

V. Mering investigates the proximate causes of the hæmato-porphyrinuria which has obtained in some cases of trional poisoning, but this is outside the scope of our retrospect.

In conclusion, trional has the advantage over sulphonal of smaller dosage, of more rapid action, and more rapid disappearance of the effect, i.e., the organism comes more speedily under the drug, and is more speedily released from it.

AMERICAN RETROSPECT.

By C. Hubert Bond, M.D., B.Sc.

Epilepsy and other Convulsive Diseases: A Study in Neuro-dynamics and Pathogenesis.—Under this title Dr. Langdon, of Cincinnati, reviews (*Journ. Nerv. and Mental Disease*, September, 1896) the present state of our knowledge upon certain facts in the anatomy and physiology of the central nervous system; and puts forward some propositions to serve as a working hypothesis to explain epilepsy and other convulsive disorders in the light of modern histological research. He lays particular stress upon Cajal's demonstration of the *individuality of the neuron* as opposed to the older views. Though anatomically distinct units, neurons are in physiological relation with each other, by means of delicate projections termed gemmules or "contact granules." The neuron-body (or nerve-cell) is to be considered, in his opinion, as mainly trophic in function; while the nervous activities themselves are to be looked for in the neuron processes, and accounted for upon the theory of inter-molecular and inter-atomic motion—this motion being the result of external stimuli acting upon the peripheral arborisations of neurons. In opposition to the many theories that have been advanced in the explanation and location of the epileptic convulsion, it is now almost universally conceded that: (1) the actual origin of the epileptic convulsion is in the cortex cerebri, and (2) that its nature is an "explosive discharge" in "unstable nerve tissue." While the nerve-cell was considered the sole seat of all nervous activity, naturally the cause of convulsive phenomena was principally sought for within this nerve-cell. But Langdon quotes researches which show that the ultimate fibrillæ of the axis-cylinder may be traced through the neuron-body to finally ramify in "neuro-plexuses" composed of multitudinous interlacing "end-tufts," with their contact-buds, and it is in this jungle that, in his opinion, any demonstrable lesions of the various convulsive disorders (including chorea, hysteria, and even uræmia) are to be sought. He is further of opinion that the cerebral cortex, instead of being a "centre of action," has for its main function that of *inhibition*, in other words, that it is a centre for preventing, checking, directing and combining various activities which might otherwise occur in different order or intensity. The phenomena observed in the case of Goltz' dog, which lived for eighteen months after having been deprived of its

cerebral hemispheres, are cited in confirmation of this view. His propositions are summarised as follows:—(1) That epilepsy, the choreas, and probably most convulsive disorders, are the dynamical expression of an *inhibitory insufficiency*; not indications of an over production of nerve-energy, nor “explosions” due to a “molecular instability,” *per se*. (2) That the cause of this inhibitory insufficiency is to be sought for in the end-brushes of collateral processes of various cortical neurons, the situation varying with the type of the disease, whether sensory, psychic, or motor. (3) That the defect consists most probably in a *structural incompleteness* (small capacity, defective insulation, imperfect contact) or a *numerical deficiency*, or both, in the collateral processes of the neurons. (4) Defective collaterals may favour occurrence of convulsions in two ways: (a) by impairing connection with other neurons (inhibitory, storage²); (b) by increased “resistance” to overflow currents, causing temporary over-charging of motor axis-cylinders.

This he terms the “collateral theory.” Upon this line of argument cases of epilepsy would be arranged under three heads—(i.) *Primary or developmental* type, including the “idiopathic” cases under twenty years of age. (ii.) The *accidental* forms (due to trauma, syphilis, and other toxins, &c.). (iii.) The *degenerative* type, to which belong rare cases in adult life and old age (not “accidental”).

Surgical Interference in Epilepsy.—Three papers bearing upon this subject appear in the last October number of the *Journal of Nervous and Mental Disease*.

The first is by Drs. B. Sachs and A. G. Gerster, and embraces a critical study, over a period of six years, of cases of epilepsy where operative procedures have been resorted to. The writers include traumatic cases and those associated with infantile cerebral palsies or some other acute cerebral condition, but not cases due to new growths. In forming conclusions as to the value of surgical interference in epilepsy, they deprecate the too early reporting of cases and the lack of adequate analysis of them. Often, if properly searched for, a history of alcoholic intemperance or some such other factor would be found, which would sufficiently explain the apparent failures. On the other hand cases in which the attacks return soon after the operation should not be excluded, as sometimes improvement sets in later on. In their opinion, results should not be considered until one or even three years have elapsed since the operation. Their conclusions are that:—Surgical interference is advisable when not more than one or at the most two years have elapsed since the traumatism or commencement of the disease causing the epilepsy. However, where a depression or other injury to the skull exists, an operation is justified even after a number of years. Simple trephining may be sufficient in certain cases, especially where there is an injury to the skull or where a cystic condition exists as the cause. Excision of cortical

tissue is advisable if the epilepsy is of short duration, and if there are indications of a special focus of disease; and excision should be practised even if the tissue appears normal to the naked eye, on account of possible microscopic lesions. Surgical interference in the case of epilepsy associated with infantile cerebral palsies is justified, especially if the interval since the beginning of the palsy is not too long. But in all cases of epilepsy, where in all probability a widespread degeneration of the association fibres exists, every surgical procedure is absolutely useless.

Dr. Collins, of New York, reports upon the microscopic changes found in portions of the cerebral cortex obtained from two cases of epilepsy, where surgical interference was resorted to. The fits in the one case were preceded by twitchings of the right thumb and index finger. Accordingly the cortical area for the right hand was removed. In it evidences of meningo-encephalitis were found, mostly chronic, but partly acute—the latter probably explained by the operation having been performed in two stages; the blood-vessels of the pia and cortex showed much obliteration associated with the formation of new capillaries. Chronic degenerative changes in the ganglion cells with slight but distinct neuroglia hyperplasia were to be seen, also patches of neuroglia tissue at the junction of gray and white matter, replacing softenings caused by the occlusion of the vessels. This patient at the time of writing, a year after the excision, had since remained quite free from epileptic manifestations. The second case had suffered for six years with convulsive affections of the left leg, which she described as cramp; these later became associated with typical "hant mal" attacks. The corresponding cortical area was excised, from which sections for the microscope were subsequently made. These revealed numerous scattered hæmorrhages, especially in the deeper layers, and a paucity of large pyramidal cells, very few of which were healthy.

Dr. N. E. Brill reviews the "*Status of Operative Procedure as a Remedial Agent for Epilepsy*." His attitude is one of pessimism. Cerebral pathology, he affirms, has not kept pace with its nosology; and, while our accuracy in diagnosing the site of a cerebral lesion is often very great, our ability to prophesy its nature is much less. He strongly deprecates the tendency to minimise the dangers attendant on craniotomies and the feeling that, under suitable precautions, the brain may be incised and explored with impunity. He maintains that surgical interference should never even be suggested, except an absolute diagnosis as to the cause and nature of the epilepsy can be determined, and that we are not at all justified in exploring, on the off-chance that should the pathological condition not be relieved or even revealed, the operation itself may possibly be followed by improvement in the epilepsy. In the present state of our knowledge, the only justification, in his opinion, for operating upon cases of so-called idiopathic epilepsy, is that death is certainly a release to these unfortunates, and that should it occur

prematurely, a neuropathic and pathological progeny is avoided—an argument that civilised nations will not recognise.

Epilepsy and its Treatment.—Under this text, Dr. Percy Bryant (*State Hospitals Bulletin*, Oct., 1896) enunciates a method of treating epilepsy which, while at first sight extreme and severe, and almost a return to obsolete practices, is really based upon the writer's belief in the toxic origin of epilepsy. In this connection, he excludes all traumatic and reflex examples of epilepsy, and refers only to idiopathic epilepsy with or without psychical phenomena. He alludes to the repeated failures to find a morbid anatomy for epilepsy in the nervous system, and believes that what facts we do know concerning the cause of convulsive seizures, as illustrated by uræmia, etc., point rather to a toxæmic origin than to any pathological change in the brain or spinal cord. He cites, again, the convulsions of children, so frequently accompanying the onset of acute infectious diseases, as an example of the effect of a toxic substance upon a susceptible though healthy nervous system. As far back as 1854 a toxic origin of epilepsy was advocated, and, in the light of our present knowledge, Bryant believes it is as tangible and tenable as the prevailing theory that the brain is the seat of disease. While admitting that the tendency to the epileptic condition may rest primarily upon some peculiar instability or susceptibility of the nervous system, acquired or inherited, he does not accept the view that epilepsy is actually inherited to the extent so many would affirm. Statistics in this direction, he says, put forth other diseases, such as catalepsy, hysteria, insanity, etc., occurring in the relatives of the epileptic, as evidence of hereditary influence; this in his opinion is unwarranted. Our observations, he says, have hitherto been too narrow, and especially has there been a failure to recognise symptoms of disturbance of the digestive functions, upon which he believes the disturbed mental condition depends. Convulsions may or may not precede or follow these symptoms, but disturbance of the mental function is inevitable and the attack continuous until the exciting cause is removed, namely, *acute intestinal toxæmia*. As regards epilepsy without psychical phenomena, where, save for a certain degree of dementia, there appears not to be the slightest manifestation indicating disease of the brain, he would attribute the convulsive seizures to the action of toxic substances accumulating in the system, and at intervals exerting an irritative effect upon the brain. The writer then proceeds to give an account of the method of treating epilepsy, adopted, with considerable success, during the last five years at the Buffalo State Hospital. The administration of bromides has been abandoned as unnecessarily severe, and as useless in that their good effect is merely temporary; in fact, he goes so far as to say that their exhibition really adds another condition, which has to be contended with, namely that, added to the epilepsy which has not been cured, there is now

bromism, developed as a result of treating the former disease. His treatment, then, briefly, is a combination of a milk diet with suitable exercise and the immediate relief of any symptoms of constipation by cathartics and enemata. A patient suffering from the psychical manifestations of the disease is purged and has all nourishment entirely withdrawn for a sufficient length of time to give the requisite rest to the digestive organs, nothing but water being meanwhile allowed. At the end of two days abnormal hunger disappears. After three or four days of this abstinence—even eight or ten days, in the case of violent mania or *status epilepticus*—a small quantity of milk is allowed; this is gradually increased from one to six glasses between morning and evening and persisted in for several weeks, if not months. The condition of the digestive organs is to be the guide, and not the physical condition of the patient. After two to four months a gradual return to the regular diet is permitted; but an immediate resort to the above is to be had on the reappearance of any symptoms of toxæmia. Drugs aiming at intestinal antiseptics, however theoretically indicated, are in practice found to be able to exert but feeble antiseptic powers. Chronic idiopathic epilepsy is incurable, and, at the best, only amelioration of the symptoms can be hoped for. It is only during the *early* stages of the disease that substantial results from treatment can be expected.

Pitting about the Hair-cups.—A Trophic Change of the Skin.—Some interesting facts are recorded (*Journ. Nerv. and Ment. Disease*, Sept., 1896), by Dr. W. Browning, of Brooklyn, concerning an affection of the skin, which he has noticed in certain nervous disorders of central origin. He has been unable as yet to obtain any areas of skin, so affected, for microscopical examination; hence the explanation of the phenomenon is as yet only speculative, and the term "hair-cups" has been used in order that the question, as to whether the pitting is about the hair follicle or actually involves it, may not be prejudged. The change is so limited, he states, that it is easily overlooked, but when once seen is easily recognised. It is more common, and the pits are larger and deeper, upon the lower extremities, especially on the front and outer side of the leg a little below the knee, and again upon the front of the thigh. It is always over muscular areas. The pits, when present, are invariably found about an existing hair or hair-bulb. The term "pitting" only partially describes the appearance, as there is an areola-like faint depression about the exit of each hair; the depression is a trifle paler in tint than the surrounding skin, rather like a minute cicatrix, but perfectly soft to the touch. The actual size of an individual pit may reach 0.5 mm. in diameter. In a typical region, no hair-exit escapes; and, while the hairs themselves do not tend specially to fall out, they do not look quite healthy under the microscope. The diseases in which the condition occurs are best typified by progressive muscular atrophy; and the writer

states that apparently, when recognised, it suffices to indicate trouble in the spinal cord (particularly in the anterior horns), and hence is of value in differentiating central from peripheral disease. He specifies nine conditions in which the pitting seems never to be observed, among which are multiple neuritis, spastic spinal paralysis, tabes, pseudo-hypertrophic paralysis, and health.

The *Post-Graduate* last year made a new departure, devoting one number to one department of the Post-Graduate School. The July number was given up to Neurological Reports, and contains several able and interesting articles, among which may be mentioned "*A Method of Relieving Tic-Douloureux.*" Dr. Dana points out the hitherto unsatisfactory and disappointing results of therapeutics applied to this disease, and the often only temporary relief afforded by surgery. He believes it is specially associated with the degenerative period of life, and often shows itself at the commencement of this period. Briefly, his method includes three stages: (1) The hypodermic injection of massive doses of strychnia. (2) The administration of iodide of potassium and tonics, especially large doses of tincture of iron; and (3) rest in bed, with light diet and diuretics. The course may have to be repeated a second or third time. The strychnia is given hypodermically in single daily doses of gr. $\frac{1}{30}$, gradually increased till at the end of fifteen or twenty days the patient is receiving $\frac{1}{8}$ to $\frac{1}{4}$ grain. Association of the pain with spasm ("motor-tic") does not contraindicate strychnia. The maximum dose is continued for about a week, and then during the following five weeks is gradually reduced. Potassium iodide and tincture of iron are given in increasing doses up to gr. xx. and mxxx. respectively, thrice daily. A rest in bed for four weeks is strongly insisted upon; this may be at home, provided an entire freedom from domestic and business anxieties can be ensured. The air should be moderately humid, and the temperature kept evenly at 68° F. He may resume his ordinary avocations at the end of six weeks; during the last two weeks a daily outing of two hours having been allowed. Dr. Dana also reports success in the treatment of "*Alcoholic Craving*" and the "*Opium Habit*" by the injection of strychnia thrice daily, gr. $\frac{1}{15}$ of the nitrate being combined with gr. $\frac{30}{100}$ of sulphate of atropine. The patient is made to understand he is taking a "cure." Patients convalescent from acute alcoholism are allowed to remain in hospital two days longer, during which they are injected thrice daily, and at the same time take a stomachic of cinchona, capsicum, and iron wine, &c. On discharge they are given a tonic, and told to report weekly, then monthly. Many patients are thus imbued with confidence, hope in the future, and a staff upon which to lean in their weakness. The morphia habit requires a much longer application of the treatment.

The same writer also contributes a paper, entitled "*A Method of Examining the Insane,*" embracing a specific plan of the way in

which a complete psychological examination of a supposed insane patient may be made, and of the kind of record which should be kept when this sort of examination is wanted; while Dr. G. R. Elliott details "Notes on Laboratory Methods," in which the *technique* of some of the more modern and useful methods of examining the nervous system is put forth.

Dr. Joseph Collins presents the results of an enquiry into "*The Influence of Anti-Syphilitic Treatment in Preventing Certain Diseases of the Nervous System Considered of Syphilitic Origin.*" Reference is made to the much disputed question as to the curability of syphilis; those who believe in it would explain the occurrence of so many post-syphilitic nervous diseases by the assumption that the original disease has been improperly or incompletely treated. The writer firmly believes that such diseases as locomotor ataxia and general paralysis rarely occur without antecedent syphilis. Granting this, the question naturally arises whether anti-syphilitic treatment, applied during the time of so-called "secondaries," diminishes the likelihood that these diseases will occur as late sequences. This question he has attempted to elucidate by a study of a considerable number of cases (apparently about 150), in which the history showed that careful enquiry had been made concerning the treatment to which the patient had been subjected at the time of the original infection; and, in reckoning the average duration of treatment, that which had been carried out only after the onset of nervous symptoms, has, of course, not been taken into account. His conclusions are that: (1) Exudative and degenerative diseases of the nervous system, due to syphilis, are most liable to show themselves at the end of the third and the beginning of the fourth decade of life. The fact that locomotor ataxia seemed to develop earlier among the dispensary, as compared with the private patients, was probably to be explained by the added effects of alcohol. (2) Thorough and prolonged administration of anti-syphilitic remedies during the activity of the virus does not seem to materially prolong the above time limit. (3) That active and prolonged anti-syphilitic treatment does not seem to prevent the development of such diseases as locomotor ataxia and general paralysis. And, further, that the cases in which syphilis is confessed, and in which treatment has been most desultory and incomplete, are not more liable to the earlier development or the severe manifestations of either of these two diseases than those in which the treatment has been all it should be. And (4) that the administration of anti-syphilitic measures in the most approved way does not fulfil the requirement of cure, and that syphilis is often an incurable disease.

A Case of Brain Syphilis Heroically and Successfully Treated.—An encouraging and instructive case is recorded (*Alienist and Neurologist*, Jan., 1897) by Professor Krauss. A young woman, with

a good family and personal history, contracted syphilis; the exact date is not defined, but it apparently was soon after she had reached the age of 20, and she was treated for primary and secondary symptoms. At the age of 25 she began to complain of sharp, shooting and continuous pains in the head, which was also tender to the touch; she still had a characteristic roseola. Mercury and potassium iodide in ordinary doses failed to relieve her. On the advice of Dr. Krauss, mercurial inunctions and protiodide of mercury internally were pushed to salivation with complete success. In six weeks, however, she relapsed, the symptoms being this time much more severe, accompanied by paresis of the right side, partial aphasia, and several attacks of Jacksonian epilepsy. The treatment consisted in the administration of almost incredible amounts of mercury—hypodermic injections of $1\frac{1}{2}$ grain of the bichloride daily for ten days and inunctions of the yellow oxide ointment. Again recovery took place and she enjoyed the best of health for three months, when a partial relapse occurred. She was rapidly salivated with $\frac{1}{2}$ grain injections of the bichloride and inunctions of the yellow oxide, the latter this time applied to the elbow and knee joints. Once again the patient completely recovered and at the time of report all her symptoms were in abeyance. It is curious to note that, following the inunctions into the knee and elbow joints, pains developed in them, followed by weakness of the hands and a slight degree of leg-drop; other joints were free from pain. The writer was inclined to regard this as a neuritis due to the mercury.

Krauss believes the case to have been a specific meningo-encephalitis affecting the frontal and parietal lobes of the left hemisphere, and points out that such cases and gummata, if small and located in the meninges, offer a very fair prognosis, dependent upon the thoroughness and audacity of the treatment; while complete or even partial recovery is extremely doubtful in all cases where the brain substance has been infringed upon, or where embolism or thrombosis or other sequelæ of endarteritis exist.

Lesions in the Brain in Acute Yellow Atrophy of the Liver.—An apparently fairly typical case of acute yellow atrophy, occurring in a man aged 40, is reported (*Journ. Ment. and Nervous Disease*, Nov., 1896) by Drs. C. W. Burr and A. O. J. Kelly. It seems, however, that the usual cerebral symptoms only developed about six days prior to his death. But the specially interesting feature in the case is the presence, as demonstrated by the microscope, of marked changes in the cerebral cortex. In other published cases these have often either not been described or even denied. The Berkely modification of the Golgi method, and that of Nissl were used in the preparation of the sections; for the latter, thionin was the stain which gave the clearest outlines. All varieties of cortical cells were affected fairly equally, but the

changes in the cell-body varied from slight implication to absolute destruction. The chromophilic particles, instead of being arranged more or less in rows, were most irregularly distributed. From this slight change all gradations of destruction were visible until merely the deeply stained nucleus remained; there was usually, however, a layer of fine, stained, dust-like particles arranged around the nucleus, separated from it always by a clear unstained zone. The nucleus, normal in size, was generally distorted in shape and often showed projections and indentations along its periphery; while its normally clear karyoplasm and its chromophilic particles evinced an excessive affinity for the stain, sometimes even obscuring the nucleolus. The latter also showed an undue receptivity of the stain, and, while remaining normal in position and size, was apt to show a somewhat irregular contour. Two stages, first a swelling and second an atrophy, could be made out in the appearances presented by the dendrites. The first were more numerous and consisted in swellings and tumefactions extending a variable distance along the dendrites, the apical process itself being frequently affected close to the cell-body; the gemmule were mostly absent, but they and the normal varicosities at the point of branching of the dendrites were sometimes excessively large. In the stage of atrophy the dendrites had disappeared or become thinned and shortened, with rounded ends. The walls of the blood-vessels and the neuroglia elements of the cerebrum and cerebellum seemed free from disease.

Considering the prominence of cerebral symptoms in acute yellow atrophy, distinct signs in the cortex cerebri might well be expected. The hitherto barren results from microscopic examination of the brain in conditions of delirium, acute mania, and acute infectious fevers will probably give place to more fruitful ones as our methods of research improve. Granting that the above changes are the result of acute yellow atrophy of the liver, considered as a toxæmia, there is still the question whether they are due actually to the same poison itself, or to another or others produced by disturbance of any of the body functions.

The case may be advantageously compared with one of phosphorous poisoning, reported by Drs. Elkins and Middlemass (*Brit. Med. Jour.*, Dec., 1891), where there were mental symptoms during life and pathological appearances in the brain cortex after death.

General Paralysis Affecting Two Sisters in the Developmental Period of Life.—General paralysis occurring under the age of twenty is admittedly rare—a total of only about 50 cases having been recorded; though now attention has been directed to it, records are rapidly becoming more numerous, the last two years having furnished twenty such. Dr. A. Hoch (*Journ. Nerv. and Ment. Disease*, Feb., 1897) gives an account of the disease commencing in two sisters at the age of ten and fifteen respectively. The clinical picture in each was that of simple feeble-mindedness, showing itself some-

what suddenly in two apparently mentally and physically healthy girls; this gradually developed into definite dementia, without any excitement or delusion. Physically, each showed a markedly impaired gait and speech. In the case of the girl affected at the lesser age, the disease ran a course of six years, death being ushered in by convulsions. The other sister is yet alive and is now nineteen and a half years old. In her case, in addition, considerable lingual and circum-oral tremor may be noticed. The right pupil is persistently larger than the left, and neither shows any response to light or during accommodation, while the patellar and other tendon reflexes are exaggerated. The children were the youngest members of a family of seven, none of which present any signs of congenital syphilis; there is a double neuropathic heredity, in that the mother was very nervous, and the father had some anomalous nervous symptoms, while he also showed some slight evidence possibly of former syphilis. An autopsy was secured in the younger sister and confirmed the diagnosis. The common lesions of general paralysis were demonstrated in the cerebral cortex, while similar changes were found in the basal ganglia. In the cerebellar cortex was seen a more or less pronounced degeneration of many of the cells of Purkinjé, and diminution in the depth of the cortex with increase of its neuroglia. And in the cord, degeneration of certain of the tracts was noted.

Hysterical Analgesia.—A case, believed to be unique, is reported by Dr. C. C. Hersman (*Alienist and Neurologist*, July, 1896). It was that of a woman, aged 44 years, who came of a slightly insane stock, and had had two attacks of puerperal insanity. Her third pregnancy was cut short to relieve her of dangerous vomiting, and this again was followed by an attack of melancholia, from which however she recovered. Her present attack, one of melancholia with hysterical symptoms, had as its exciting cause the suicide of her husband. While tactile sense appears to remain normal, she has complete loss of sensation to pain; if her skin is pricked or pinched, her tongue prodded, or even her eye rubbed, she evinces not the slightest evidence of pain, nor can she distinguish between heat and cold. Her power of taste seems destroyed, and her desire for food paralysed, although she has been known to secrete food. Her evacuations are the result of her cleanly habits, not because she ever feels any desire, and the bowels rarely move without cathartics. She has lost all affective feelings for her children and family, and her desire for sleep would seem gone too, for she seldom sleeps without hypnotics. Such a complete analgesia with a blunting of the emotions, functions, and almost all the senses is very rare, in fact the writer can find no record of such a case.

Surface Thermometry of the Head.—A paper by Dr. McCaskey discussing the clinical value of observations upon the surface

temperature of the head appeared last October (*Alienist and Neurologist*). Some results obtained by previous observers were quoted, and the technique necessary to ensure accuracy was described. What is really registered by the surface thermometer applied to the scalp is the absolute temperature of the skin, which is the resultant of all the chemico-vital processes occurring between it and the brain and within the latter, minus the heat lost in transit; it is palpably modified by the heat of the brain, and this modification the surface thermometer readily estimates. The normal surface temperature of the two sides of the head is seldom equal. In meningitis, of the acute or subacute type, the surface temperature of the head would seem to be invariably elevated out of proportion to the general temperature, and to the greatest degree over those areas in which the inflammatory process is most intense. In cases of brain tumour, it is elevated in proportion to its proximity to the surface, and the rapidity of its growth, with consequent irritative phenomena; this applies also to abscesses and hæmorrhages. But, owing to frequent fluctuations, a single thermometric observation is of little value in diagnosis. On the other hand, in embolism the temperature has been found lower over the embolic area—in one case even $\frac{1}{4}$ deg. has been recorded. Observations in cases of insanity have been conflicting, but most agree that acute mania shows an elevation. To sum up, the writer maintains that surface thermometry can no more be safely neglected in the study of brain disease, than can axillary and rectal temperatures in general disease.

Eastern Michigan Asylum at Pontiac.—The report for the biennial period ending June, 1896, is before us, and we have noted with interest some remarks by the Medical Superintendent concerning the readmissions. Of the whole number of admissions (467) during the period, 99 were readmissions of patients formerly under treatment in the asylum; but only 19 among these readmissions were instances of patients who had been classed as "recovered" at the time of their previous discharge. The average duration of absence of these 19 cases was a little over five years. Though this number (19) is less than it had been for some previous periods, much is made of these readmissions, and the circumstances attending the discharge and readmission of these patients are briefly alluded to, and any facts known concerning the history of each case since discharge are recorded. It would appear from a perusal of the discharge table, that not all cases, in which the mental symptoms have subsided, are classified as "recovered," a considerable proportion of them being marked "improved." Dr. Christian says, "The possibility of distinct attacks of insanity occurring in the same individual must be conceded, and to some extent we must look for readmissions of 'recovered' cases. However, careful enquiry will, as a rule, be

sufficient to mark such cases as intrinsically distinct from those in which a constitutional defect is the cause of the tendency to relapse after varying intervals, thereby placing upon the disease the stigma of chronicity."

ITALIAN.

By *W. Ford Robertson, M.D.*

The Relation of Epilepsy to Auto-intoxication.—C. Agostini (*Rivista Sperimentale di Freniatria*, 1896, pp. 267 and 435), following up the researches of Voisin and of Mirto, who have shown that the urine of epileptics possesses a special toxicity, and those of a number of other observers who have demonstrated that true epileptic fits can be produced as the result of auto-intoxication by abnormal products developed in the gastro-intestinal canal, has made an investigation into the composition and toxicity of the gastric fluid and urine in a number of cases of epileptic insanity at various periods in relation to their fits. The great care and strict attention to scientific requirements with which he appears to have carried out this difficult research, are such as to inspire confidence in the accuracy of the results he has obtained, as well as of the conclusions he has deduced from them. Without overturning any long-accepted theories he has made what certainly appears to be a most important contribution to our knowledge of the pathogenesis of epilepsy, and he has formulated new principles of treatment which, while they seem in the light of his investigations to be eminently rational, have already, as carried out by himself at least, been followed with success of a very remarkable and promising kind.

He finds that in the intervals between the fits the gastric juice is in most cases normal as far as can be recognised by mere chemical analysis, with, however, a tendency to hyperacidity and especially excess of hydrochloric acid. For a short time previous to a fit, and for some time afterwards, there are changes indicating a condition of transitory dyspepsia. An epileptic convulsion, in proportion to its duration and intensity, greatly disturbs the whole digestive functions of the stomach, increasing the secretion of hydrochloric acid and mucus, favouring the development of abnormal fermentation products, leading to the appearance of biliary acids, lowering the peptic action, and diminishing the sensibility, motility, and absorbing power of the organ. In the intervals between the fits the toxicity of the gastric juice (tested upon rabbits) is not necessarily greater than in healthy individuals, provided the patient is not suffering from chronic gastric catarrh. In the prodromal period in relation to a convulsive seizure, and especially in those cases in which there is chronic

gastric catarrh, the stomach wash displays energetic and constant toxic properties. After a convulsion this toxicity is still further increased. Attacks of petit mal increase the gastro-toxic power in a similar manner. The poisonous principles appear to be of the nature of leucomaines, and are probably the same as those that are found in the gastric fluid of dyspeptics in general. Examination of the urine shows that in the intervals between the fits the tissue metabolism of epileptics is below normal, as evidenced by the elimination of azotised substances (urea, uric acid, and creatinin), phosphoric acid and chlorides. The excretion of azotised products is further diminished in the prodromal period. After a violent motor fit there is an increase in the density and acidity of the urine, and in the elimination of all the ordinary products of tissue change, except chlorides. None of the abnormal constituents of the urine that may appear after a fit do so regularly or constantly. The urine of epileptics has always a greater toxicity than that of normal individuals. This toxicity is increased in the period immediately preceding a fit. After a convulsion the urine is hyper-toxic and remains so for more than twenty-four hours. The toxicity is always proportionate to the gravity of the gastro-intestinal disturbance associated with the fit. It is probably due to products that have the general reaction of leucomaines. The administration of bromides distinctly diminishes the toxicity of the urine.

The author maintains that in a large proportion of epileptics the fits are preceded by marked symptoms of gastric catarrh. In the intervals between the fits the catarrh in most cases disappears, but in many it persists, becoming aggravated about the time of the fits. In those patients who have chronic catarrh of the stomach the epileptic phenomena are more frequent and more severe. He believes that this chronic or transitory gastric catarrh is accompanied by putrefactive changes in the contents of the stomach and intestines, and the formation of toxic substances which become absorbed and tend to accumulate in the blood, giving rise to the malaise, headache, furring of the tongue, etc., which precede the occurrence of a fit, and finally determining the convulsion or series of convulsions. He has found that all measures tending to the elimination of such toxic products, or to the prevention of their formation, diminish the frequency of the fits or altogether prevent them. He further believes that the processes of oxidation are usually deficient in epileptics. Hence leucomaines absorbed from the intestinal canal are not completely oxidised as in healthy persons. He also thinks it is probable that in epileptics, on account of the morbid functioning of the nervous system, excretory processes take place with abnormal slowness, so that there is a tendency to the retention in the system of products of reduction that ought to be eliminated. He fully recognises that idiopathic epilepsy is essentially a cerebral disease, and

would look upon it as the result of "a polymorphic degenerative state," the most constant and almost pathognomonic feature of which is the existence of "somatic and functional asymmetry." He rejects the view of Chaslin and others according to which epilepsy is due to a special brain sclerosis. But while admitting the existence of a cerebral abnormality that predisposes to epilepsy and often actually determines it, he contends that it is logically and experimentally proved that in many cases the determining cause of the repetition of the fits is auto-intoxication. The irritation occasioned by the toxic agents produces either hyper-excitability of the psycho-motor centres, or exhaustion of their inhibitory power, permitting the tumultuous action of the lower automatic centres. These toxic agents need not have epileptogenetic properties. They act simply by increasing the vulnerability of the imperfect and unstable nervous system of the epileptic.

Since auto-intoxication plays so important a part in the production of epileptic fits, Agostini advocates that we should endeavour as far as possible to remove the factors of such intoxication. In the first place we must correct gastro-intestinal catarrh when it is present, and endeavour to remove toxic substances that may have formed in the alimentary tract. As the best means of attaining this object he recommends repeated washing out of the stomach with salt water, especially when fits are anticipated and during the occurrence of a series. He also advises the use of purgatives, saline enemas, diuretics (especially lactose) and the abundant administration of milk along with salol or naphthol as intestinal antiseptics. In the second place we should endeavour to increase the activity of processes of oxidation and of normal tissue changes in general. These objects, he thinks, are best secured by the use of small doses of alcohol, careful hygiene, fresh air and a moderate amount of muscular exercise. With regard to diet he does not agree with Haig that epileptics should become vegetarians. He has found that a purely vegetable diet gives even worse results as regards the fits than a purely meat diet, a circumstance which he attributes to the fact that vegetable albumen putrefies more readily than animal albumen. He recommends a mixed diet with plenty of milk. Lastly, we should endeavour to diminish the reflex activity of the cortical nerve-centres which in epileptics are in such unstable equilibrium. He believes that the only really effective drug for this purpose is bromide of potassium. He recommends that it should be given in somewhat smaller doses than those generally used, and that it should be combined with salol. Its efficacy is increased by the antitoxic therapeutic measures already mentioned. If gastric catarrh appears the administration of bromides should be suspended, and the attention directed to the removal of the catarrh.

The Structure and Origin of Granulations of the Ependyma.—G. B. Pellizzi (*Rivista Sperimentale di Freniatria*, 1896, p. 466) has written a paper upon this subject containing a number of points of considerable interest. He holds that granulations of the ependyma are composed essentially of proliferated neuroglia, and that the surface epithelium plays no part in their formation. In their early stages they are covered by a single layer of epithelial cells which never show karyokinesis. As they increase further in size this epithelial layer tends to become shed. He maintains that the appearances indicating proliferation and downward growth of the epithelium described by Beadles (*Journal of Mental Science*, 1895, p. 32) as the first stage in the development of these granulations, are due merely to the circumstance that adjacent centres of neuroglia proliferation have raised the epithelium over them, leaving only a narrow space between. Regarding the causes of this localised proliferation of neuroglia, he rejects the theory of Weigert that it is to be found in the degeneration and loss of the surface epithelium, and consequent removal of the resistance that it normally offers to the growth of the underlying tissue. He also gives reasons for being unable to accept the theory of Beadles according to which ependymal granulations "owe their origin to an irritative cause—possibly some chemical substances contained in the fluid of the ventricles, or present in the blood." His own view is that they form in consequence of certain morbid changes in the vessels of the ependyma, in the immediate neighbourhood of which the neuroglia proliferation always starts. The most important of these changes is hyaline degeneration of the whole vessel wall. How this vascular disease stimulates the growth of the adjoining neuroglia, the author does not pretend to be able fully to explain.

The chief interest of Pellizzi's paper really lies, however, in the fact that it contains what is probably the first answer by an authority of weight to Weigert's arguments in support of his new theory regarding the structure of the neuroglia, contained in his recently published monograph. Weigert's main contention is that the long accepted view according to which the neuroglia is composed entirely of special cells and their processes, is erroneous, and that the tissue really consists of two anatomically distinct elements, namely fibres and cells. Pellizzi rejects this new theory, and maintains that the description of the neuroglia given by Golgi is still the correct one. Some of the principal considerations that he opposes to the case made out by Weigert are briefly as follows. Weigert's new staining method gives what is evidently a special and very fine chemical differentiation between the fibres and protoplasm, the former retaining the stain, while the latter is left colourless and invisible. But a chemical differentiation of this kind does not suffice to disprove that these tissue elements are continuous. When the evidence of various methods is taken the continuity of protoplasm and fibre becomes convincingly de-

monstrated. Of special importance in this relation is Vassale's modification of Golgi's silver method, of which Weigert does not appear to have known. Lastly, the fine chemical differentiation between fibre and protoplasm obtained with Weigert's method in the case of the normal neuroglia, is in a large degree lost when the method is applied to hypertrophied neuroglia-cells such as are contained in ependymal granulations. A gradual transition of the one element into the other then becomes apparent in many instances.

A New Italian Neurological Journal.—Remarkable evidence of the zeal with which neurological studies are at present being pursued in Italy, is furnished by the fact that the directors of the *Rivista Sperimentale di Freniatria* have recently found it necessary, on account of the ever increasing number and importance of the original papers requiring publication, to start in association with their long established quarterly a new monthly journal, to which they have relegated the bulk of their reviewing work. This new journal, which began to appear at the beginning of last year, and which is named the *Rivista di patologia nervosa e mentale*, is edited by Professor Tanzi of Florence in conjunction with Professors Tamburini and Morselli. It aims at being "an Italian review of all the neurological and psychiatric work published in Italy and abroad." Each issue also contains, however, three or four usually short original papers. Among these there have already appeared many of great importance, such as those of Vassale and Generali upon the parathyroid glands, and several by Lugaro upon nerve cells. The journal is certainly one that can be strongly recommended to the attention of those in this country who desire to keep in touch with the rapid advances that are continually being made in every department of neurology by continental workers.

The Respective Value of the Chromophile and Achromophile Parts of the Protoplasm of the Nerve-Cell.*—Lugaro (*Rivista di patologia nervosa e mentale*, 1896, January) has advanced a number of arguments, based largely upon observations of his own, in support of the view that the achromophile part of the protoplasm of the nerve-cell is composed of filaments and that the wave of nerve force is conducted by these and not by means of the chromophile part, as had previously been generally supposed. The latter, he maintains, represents an interfilamentous mass, so that Nissl's staining method only gives as it were the negative of the proper structural configuration of the protoplasm.

* There is at present no English word that exactly translates the Italian adjective *cromofilo*. The term "chromatic," which might be employed, has long been used in histology as the adjectival form of "chromatin," which is exclusively a nuclear structure. It seems, therefore, necessary to introduce these new terms in order to avoid confusion between the stained elements of the protoplasm of the nerve-cell and those of the nucleus in preparations by Nissl's method.

Since the publication of this paper these views have received support of an important kind. Ramon y Cajal has advocated the theory that the achromophile part of the protoplasm is related to conduction, and Nissl has admitted that only a negative picture of the protoplasmic structure is presented in preparations by his method.

The Pathology of the Nerve-Cell.—In a later paper than the one just noticed, Lugaro (*Rivista di patologia nervosa e mentale*, 1896, August) has given a very valuable *résumé* of the present position of our knowledge of the pathology of the nerve-cell, along with an account of a number of highly important original observations and conclusions bearing upon the subject. At the outset he gives some useful recommendations regarding the best histological technique. He maintains that Golgi's method is reliable for the observation of certain pathological changes, but only if care is taken to obtain proper fixation. He strongly recommends the employment of Cox's modification of the sublimate method, which, he says, gives the most constant and regular reaction, and preparations almost quite free from precipitates. Even with this method, however, it is essential, in order to avoid artificial changes in the nerve-cells, to use only very thin pieces of tissue. He further recommends that the mercurial deposit should be blackened by one or other of the many procedures now employed. The plan he adopts is treatment of the sections first with a solution of hydroquinone (1 in 500), and then with one per cent. hyposulphite of soda. This method gives images that are perfectly black and "the preparations are unalterable." (This expression might lead one to infer that cover glasses may be placed on these sections with impunity, but the writer has found that this is not the case). For the study of the chromophile and chromatic elements, he recommends sublimate fixation, and staining with a cold solution of thionine. Full details of this method, which are not given in the paper under review, may be found in the issue of the above journal for February last. For the observation of modifications of the achromophile part of the protoplasm, he employs sublimate fixation and staining with Heidenhain's iron hæmatoxylin and Delafield's hæmatoxylin.

The methods of Golgi and Nissl have revealed certain general types of alteration, rather than special alterations characteristic of single affections. The most important pathological process affecting the nerve-cells revealed by Golgi's method is *varicose atrophy*. It consists in a progressive alteration of the cell, beginning in the extremity of the protoplasmic prolongations, proceeding along their course, and reaching the body of the cell. It first shows itself in the loss and agglutination of the little spines that cover the fine dendrites. At a later stage these fine dendrites assume a varicose appearance. Then the large prolongations become deformed, acquiring a rugose appearance.

Finally the body becomes deformed and vacuolated, and the whole cell may entirely disappear. Varicose atrophy has been recognised in a considerable number of affections of the nervous system, including general paralysis, secondary dementia, alcoholism and rabies. It has also been observed to follow various experimental lesions. A second morbid change in the nerve-cell revealed by Golgi's method is *varicose hypertrophy* of the axis cylinder, which has also been found in various nervous affections. Regarding the significance of these changes, Lugaro thinks that it cannot yet be established with certainty. One can exclude, however, that varicose atrophy can express a simple disturbance of the nutrition of the element, or an alteration essentially of an initial character. It can be shown by other methods that in its first phase, and probably also before the condition is initiated at all, the cell-body presents changes in the protoplasm. It therefore appears to him probable that varicose atrophy expresses not a simple pathological alteration, but a final destructive process which naturally reveals itself first in the most delicate parts. Regarding varicose hypertrophy he thinks it is very improbable that it can be separated from lesions of the cell-body, since it has been demonstrated with the aid of Nissl's method that a lesion of the nervous prolongation results in changes in the cell-body.

The most noticeable, most constant, and earliest of the changes observable in the nerve-cells with the method of Nissl is the process of disintegration of the chromophile part of the protoplasm, to which Marinesco has applied the term *chromatolysis*.* Its exact mechanism is still uncertain and obscure. The descriptions that have been given of it by various observers differ in numerous particulars. This uncertainty appears to Lugaro consequent upon an analagous uncertainty regarding the normal structure of the protoplasm, and especially regarding the essential conformation of the chromophile part. He himself regards this portion as composed of a mixture of elements of different degrees of colourability, and disposed in the manner of a sponge. In the process of chromatolysis the denser parts persist longest, giving rise when they finally break down to the slightly coloured granular matter that presents itself in the degenerated protoplasm. Chromatolysis has been observed, especially in the nerve-cells of the spinal cord, in a large number of both acute and chronic diseases affecting the nervous system, as well as in various forms of poisoning and after certain experimental lesions. Another form of alteration revealed by Nissl's method has been described by Sarbò and others under the name of "homogeneous swelling." Lugaro maintains that the individuality of this process has not been established, and that it is to be regarded as simply represent-

* *Chromolysis* would be a much more appropriate term.

ing an advanced phase of the process of chromatolysis. The condition termed "sclerotic degeneration," in which the nerve-cell appears shrunken, intensely stained, homogeneous, and surrounded by a broad pericellular space, is one that is, he thinks, artificially produced by the action of hardening agents under circumstances not well understood.

Lugaro thinks it is of great importance that in the study of pathological material the results of the methods of Golgi and Nissl should be compared. These methods are at one in establishing the possibility of a partial degeneration of the protoplasmic prolongations and of the cell-body itself, phenomena which probably have a special importance in connection with mental diseases. It seems certain that in a large number of affections of the nervous system the elements, notwithstanding that they are altered, functionate, though in a manner more or less abnormal, and that they are able to remain in this state for many years.

Although the method of Nissl is capable of revealing the most minute initial alterations in the protoplasm of the nerve-cells, it is unable to inform us at what point the process becomes irreparable, or how and when the achromophile part is affected. Some inductions regarding the behaviour of this part have, however, recently been drawn by Marinesco from observations made in repeating the classical experiments of Nissl on the effects of section of the peripheral motor nerves. According to these experiments, after section of a motor nerve, one may observe in the corresponding central cells a progressive fragmentation of the chromophile elements, which starts from the origin of the nervous prolongation, and gradually extends in about four days to the whole cell. The chromophile part now appears finely powdered. About the fourth day the cell body begins to swell, and the prolongations appear homogeneous. Afterwards the latter disappear altogether, and the shrunken nucleus moves towards the periphery. The process may continue until the cell is completely destroyed. It does not occur equally in all the cells affected, so that its different stages can be observed side by side. Marinesco distinguishes in this process two phases. In the first the central end of the cut nerve remains intact, while in the cell there is manifested *une réaction à distance*, characterised by more or less complete dissolution of the chromophile elements; in the second there is disintegration of the achromophile part, and consecutive degeneration of the central end of the nerve. This change in the achromophile part of the protoplasm is not directly observable, but is deduced mainly from the results of the process, the disappearance of the dendrites, the alteration in the nervous prolongations, and the general deformation of the cell. Lugaro has repeated these experiments, employing also the methods mentioned for the coloration of the achromophile part of the protoplasm. The results he has obtained fully confirm the observations of Nissl and Marinesco, and also the

inductions of the latter with regard to the behaviour of the achromophile part. In the reactive phase of the change this portion of the cell retains its delicate striation, but in the second or degenerative phase this appearance is lost.

The author urges the great importance of studying the condition of the achromophile conducting part of the nerve-cells as well as that of the chromophile part, both in experimental work and in disease. Alterations in the chromophile elements represent only a reaction of the cell to a disturbing force. On the other hand changes in the achromophile part are to be regarded as degenerative and irreparable. Nissl's method allows of localisation of the seat of a lesion with perfect exactness, but it does not enlighten us as to pathogenesis, regarding which there is at the present time in relation to a large number of diseases, complete obscurity, or interminable controversy. Much of this obscurity would be removed by the systematic employment of methods for the coloration of the achromophile portion of the nerve-cells on experimental and clinical material.

The Parathyroid Glands.—The great advances made within the last few years in our knowledge of the physiology of the thyroid gland have revealed the important functional relationship of this organ to the nervous system, and thus invested it with a new and special interest for the neurologist. But it would seem that in the comparatively small parathyroid glands we have organs possessing a still closer physiological relationship to the nervous system. The experiments that have recently been carried out upon these bodies by Professor Vassale, of Modena, and Dr. F. Generali (*Rivista di patologia nervosa e mentale*, 1896, March and July), have yielded results the importance of which to medical science can hardly be overestimated. At an early stage of their investigations, which were carried out upon cats and dogs, they ascertained that there were four parathyroid glands in these animals instead of two, as had been supposed since their discovery by Sandström in 1880. This anatomical fact was independently observed by Kohn about the same time. Recognising how all previous experiments upon these bodies had been invalidated by this error in regard to their number, Vassale and Generali instituted a new series of experiments which have yielded results of the most remarkable kind. Attention has already been directed to the subject by the writer at considerable length in a digest in the April number of the *Scottish Medical and Surgical Journal*. It will be sufficient here to indicate briefly the main facts that these Italian observers have demonstrated by their experiments. They have shown conclusively that the parathyroid glands are not embryonic remnants as had previously been generally maintained, but organs of vital importance in the animal economy. When they are completely removed the animal dies within a few days, after having exhibited various morbid phenomena chiefly referable to implication of the nervous

system, including depression of spirits, tremors, paralysis of the muscles of mastication, rigidity of the posterior limbs, unsteadiness of gait, general muscular weakness, and slight convulsions. They have shown also that the acute symptoms that have been found to follow thyroidectomy in many animals are due not to loss of the thyroid, but to contemporaneous removal of the parathyroid glands, for they have demonstrated that the thyroid may be completely extirpated without the animal showing any of the serious symptoms previously associated with this operation, if even a single parathyroid gland is allowed to remain. This indicates that arrest of function of the thyroid produces only myxœdema. The authors promise a further communication on the subject dealing especially with the results of parathyroid feeding. Later experiments by other workers on the Continent have already confirmed their observations, but they have shown also that in some animals ablation of the parathyroids is occasionally not followed by a quickly fatal result, but by a special form of cachexia. The question whether or not this cachexia of parathyroid insufficiency corresponds to any disease known in the human subject has not yet been answered. The microscopic changes that have been found in the spinal cord after death following removal of the parathyroid glands, have already been referred to by Professor Bianchi in the previous issue of the journal.

The Treatment of Insanity by means of Abscesses produced by the Hypodermic Injection of Turpentine.—G. Albertotti (*Annali di Freniatria*, 1896, pp. 23 and 147) has made an extensive trial of this method of treatment in various forms of insanity, injecting usually from one to two grammes of turpentine into the external aspect of both thighs. Full details of each experiment are given, and the results recorded are certainly remarkable. The author claims that the treatment is perfectly safe, and that it is one of the most potent means of obtaining improvement, particularly in the acute forms of insanity.

RETROSPECT OF CRIMINAL ANTHROPOLOGY.

By Havelock Ellis.

H. H. Holmes (or, to call him by his real name, Herman Webster Mudgett), a qualified practitioner of medicine, whose extraordinary career of crime attracted world-wide attention and has caused his name to be coupled with that of Wainewright, was during the last days before his execution carefully studied by Professor Arthur MacDonald and Dr. E. S. Talbot (MacDonald, "Criminological Studies," *Report of the Commissioner of Education*, Washington, 1896; Talbot, "H. H. Holmes," *Journal of the American Medical Association*, Aug. 1, 1896). The case is one of

so much importance that it is worth while to summarise the reports of these two experienced investigators.

Holmes was born in New Hampshire in 1861. Dr. MacDonald has accumulated a considerable amount of documentary evidence from persons who knew him in childhood and youth, and there is nothing to show that in early life his conduct was in any respect abnormal. He belonged to a respectable New England stock, who for at least three generations have been upright, God-fearing citizens, as are his cousins to-day. (The evidence is, however, not complete; nothing is known of the mother—beyond Holmes's own remark to Dr. MacDonald, certainly significant if true, that she was epileptic—nor are we told if there are any brothers or sisters; even the father is barely mentioned). He was himself a quiet and studious lad, with refined tastes, not caring to join to any extent in the rough games of his companions, a general favourite with the mothers because he was such a well-behaved lad, predisposed to a religious life, a painstaking student of the Bible. That is the testimony of one who knew the family well, and beyond an evident lack of vitality there is little to note. It may be mentioned that Holmes's observance of religion and Sunday-school teaching continued long after his criminal career had begun.

He married, soon after the age of 18, a woman who devoted herself entirely to his interest, and slaved to earn money to enable him to qualify in medicine, which he studied at the University of Michigan. Some of his teachers and class-mates are now prominent physicians and have furnished interesting evidence to Dr. MacDonald. It cannot be said that this evidence is very favourable, but it reveals little that can be called criminal. He was in very straitened circumstances throughout his student years, and was constantly devising petty methods of making money. For the most part these were fairly legitimate, but, it seems, not always. One professor at the University accuses him of attempting to enter his house as a burglar on two occasions, and of trying on another occasion to break open a drawer in which valuables were kept. (This was shortly before graduation in medicine; after which he asked this very professor to assist him in his project of becoming a medical missionary in Africa). Most of his fellow students, however, have nothing more definite to say than that he was "very dishonest and tricky" and "did not seem to care for anyone but himself." He was regarded as a "spy" and "a mean fellow." He attempted to use cribs during examinations. Many thought him "repulsive," or with "treacherous eyes," and several mention that he walked with his eyes down and could not look his interlocutors in the face. His habits seem to have been unclean and he was nick-named Smegma. He did not seem to be in good health; took an active interest in the Young Men's Christian Association; was "slow to grasp ideas and not at all ready in reasoning." Nevertheless a fellow student who is an alienist, on

recalling his recollections, thinks he must be regarded simply as an unpretentious individual rather below mediocrity, but plodding, not peculiar, degenerate, defective or insane.

He graduated in medicine in 1884 (according to one report, after a rather lenient examination, out of pity for his circumstances) and for a time practised his profession, the medical missionary project having fallen through. Already, about the time of his graduation, in addition to the criminal attempts already made, he had worked out a scheme for defrauding an insurance company, but the fellow student with whom he planned this scheme died and it came to nothing. During his student days, also, his sexual immorality, which henceforth was always pronounced, first began to develop. A widow made serious complaints about him; they were not believed at the time, but he confessed afterwards that they were true. In 1887 he abandoned his wife and child, without divorce, and bigamously married a Denver lady; subsequently there appears to have been a third bigamous marriage. During the years between 1884 and 1894, however, his life is little known; he was constantly occupied in more or less shady transactions all over the country, his schemes sometimes being remarkably bold and impudent, as when he negotiated for the sale to a Gas Company of a gas machine which was actually running on gas from the company's own mains, but chemically treated so that the gas inspectors declared it was not theirs. He was often in difficulties, but always managed to elude them. During this period he built his celebrated "Castle," with its secret chambers and passages, dark rooms, trap-doors, &c., and here he employed the female typewriters and others who mysteriously disappeared from time to time. For the most part, however, his murders appear to have been judiciously distributed over the country. In his final confession—partly false, partly true—he admitted twenty-seven victims, but many of these persons are still living, so that the exact number of victims cannot be known. The defrauding of Life Insurance Companies seems to have been Holmes's favourite operation, and he was entirely devoted to his crooked business and to ingratiating himself with women. His success during some ten years in these operations shows that there was no serious lack of mental acuteness, or at all events of cunning.

After arrest, in 1896, he was 35 years old, 5ft. 7½ in. in height, weighing 150 lbs. In general appearance, says Dr. Talbot, he was not specially remarkable or repulsive, quiet, mild-mannered, like an ordinary business or professional man. But examination somewhat modified this impression. The occiput was asymmetrical and prominent (in this anatomical description I follow Dr. Talbot's careful examination), the bregma depressed, the left side of the forehead more prominent than the right, which was sloping. The hair was brown, and on body and face excessive. The face was arrested in development; the zygonia on right side arrested and

hollowed. He was emaciated, presenting a consumptive appearance. (Dr. Talbot reproduces the best portrait he knows). The nose showed marked stenosis of nasal bone. There was inherited strabismus of left eye, which was higher than the right. Arrest of thyroid gland. Slight protrusion of upper jaw, with arrest of lower (measurements given). He was pigeon-breasted to a marked extent; the right arm was one and a half inches longer than the left. He was right-handed (or, as he told Dr. MacDonald, ambidextrous). Sexual organs unusually small. Photographs of upper and lower jaw are given, and Dr. Talbot (who speaks on this point with special authority) considers that the abnormal development of the mouth—hypertrophy of alveolar process, non-development of third molars, &c.—certainly indicates a very unstable nervous system in early life. He thus concludes his investigation: "In twenty years' experience I have never observed a more degenerate being from a physical standpoint. . . . His mental defects, so far as they existed, seem to have been confined to his moral sensibilities. . . . Holmes was certainly a degenerate physically, as the numerous stigmata he bore proved, but he was not more of one than many moral men and good citizens. There was, with the defects, undoubtedly a certain defectiveness and want of balance of the nervous system, but it cannot be said that this necessitated the career he chose. . . . There was, possibly, always a certain defect in his moral constitution which was checked in its effects by the restraints and training of his earlier years, and might have been overcome entirely had his will been directed into proper paths. His case seems to be largely, if not altogether, one of acquired moral obtuseness, not of complete congenital moral insanity."

Dr. MacDonald's examination was anthropometric, and, especially, physiological. Among his numerous measurements may be mentioned: Maximum length of head, 191 mill.; max. width of head, 149 mill.; cephalic index, 78; nasal index, 63; height of palate, 20 mill.; length of right ear, 60 mill.; left ear, 62 mill. His sensations of locality on wrist were found to be more obtuse than normal (17 mill.), and the left hand was less sensitive to heat than the right hand. Experiments with special kymograph for the purpose of measuring the effects of mental and emotional states by the movements of the chest, showed that the emotion of hatred was the prisoner's most intense line, i.e., absorbing his attention most, while an effort to experience the emotion of affection had little more effect than reading the Bible, which had least of any. (Dr. MacDonald desired to use the kymograph during execution, to elucidate the physiology and psychology of death, but as the prisoner himself was unwilling the authorities were unable to give consent). Like Dr. Talbot, Dr. MacDonald remarks that Holmes's chief psychological peculiarity was his marked tendency to lie. MacDonald would class him—from his abnormal height of palate, general demeanour, &c.—with neurotics. The two investigators

are thus in fair agreement. It is unfortunate, however, that the heredity could not be exactly studied, as the congenital element might thus have been more reliably determined.

The Degenerate Jaws and Teeth.--Under the above title Dr. E. S. Talbot has lately published a study which is to some extent complementary to his well-known work on *The Osseous Deformities of the Head, &c.* (*International Dental Journal*, Feb., Mar., April, 1897). Starting from the fact that, next to the ears, the jaws and teeth are the most variable parts of the organism, or the most liable to degeneracy, he proceeds to consider briefly the evolution of the primitive tooth. The two chief theories are that of concrecence (Magitot, Schwalbe, &c.) and that of differentiation (Osborn, Cope, &c.); Talbot finally reaches the conclusion that both theories are true, and that they are really identical.

In the course of his interesting study, which, like all Dr. Talbot's work, is very fully and admirably illustrated, many points are brought forward which are sometimes new and always worth bearing in mind by those who are concerned with the psychological significance of anatomical abnormalities. Thus he remarks that the apparently excessive development of the lower jaw often noted in criminals is frequently only apparent and due to real arrest of development of the upper jaw; in such cases there is marked depression of the alæ of the nose, producing the impression of a hollowing out beneath the orbits; the facial angle is the criterion in such cases. Similarly, what is sometimes regarded as a deformity of the vault is often in reality hypertrophy of the alveolar process—the result of irritation at the period of eruption of the permanent teeth—to which Talbot attributes great importance as a stigma of degeneracy. Talbot regards a large number of dental and allied anomalies as atavistic; thus supernumerary teeth bear witness to the fact that during the course of evolution from the lowest primate man has lost twelve teeth, and such supernumerary teeth frequently assume the primitive cone shape. In the same way deformities of the jaw are frequently atavistic, the V-shaped jaw being a reversion to the reptilian type, the saddle-shaped to the carnivorous, most carnivora exhibiting a distinct approach to the saddle-shape. (Some felines have a shortening of the jaw which partially obliterates it, but in most canidæ it is well marked.) In the gorilla, which in respect to dentition comes nearest to man of the higher apes, there is a distinct approach to the saddle-shape, to a less extent found also in the orang-outang. The arch in some of the cebidæ very nearly approaches man. It all depends upon the extent of prognathism; when that is reduced the arch appears and rectangular arrangement of the teeth is lost.

The Brains of Criminals.—Dr. G. Mondio, of the Istituto di Anatomia Umana at Messina, has recently studied nine brains of criminals. (*"Nove Cervelli di Delinquenti," Archivio per l'Antropologia*, 1895). He followed the methods of Giacomini, and pre-

sents a careful and detailed description of each brain. He finds that there is frequent arrest of development, and (in agreement with Debierre) he believes that criminals have smaller brains than non-criminals. Further (in agreement with Tenchini and others) he holds that the great and striking fact about the brains of criminals, as compared with the ordinary population, is the number of abnormalities, and the consequent frequency of atypical brains. Mondio compares these brains of criminals with the 80 normal brains which reached the Istituto Anatomico during 1892-4. All, or nearly all, the anomalies found in the former were characteristic of inferiority and due to arrest of development. Mondio finds no criminal type of brain, but he thinks that since the anomalies found were chiefly those of arrested development, philogenetic in character, "the hope is not unfounded that with the accurate study of these persistent anomalies, guided by physiology and clinical observation, we may some day be able to construct the criminal type."

The Zeitschrift für Criminal Anthropologie.—The first number of the above journal (published by Priber, Berlin, at 20 mks per annum) appeared in April last, under the editorship of Dr. Walter Wenge. It is devoted to the anthropometry, craniology, and psycho-pathology of criminals and prostitutes, to criminal statistics, to the penal and forensic bearings of criminal anthropology, and to homosexuality. As collaborating editors the following names are mentioned on the title page: R. Arndt, Krafft-Ebing, Naecke, Kurella, Baer, Benedikt, Havelock Ellis, etc. It will thus be observed that while it is sought to give a certain international character to the new journal, Lombroso and those most closely connected with his standpoint have not been invited (unless Kurella should be considered an exception) to co-operate; no doubt a sensible decision, for while everyone acknowledges Lombroso's position as the founder of criminal anthropology, there are few, or none beyond his own personal disciples, who follow him in matters of detail. This is, indeed, the point of the first article in the new journal by Dr. Naecke (who plays the chief part in this opening number) on Lombroso and the present position of criminal anthropology. It is here pointed out that while we owe it to Lombroso that the criminal is to-day an object of scientific study instead of merely legal consideration, and while he indicated the effect which such study must have in modifying our treatment of the criminal, it is very far from possible to agree with Lombroso's methods or to accept many of his conclusions. Then follow articles on crime in relation to insanity by Arndt, on the handwriting of criminals by Preyer, an excellent summary by Muenchheimer of the literature dealing with prostitution during 1896, Lauppts' *questionnaire* on suicide with remarks, a report on the Geneva Congress of Criminal Anthropology by Naecke, and reviews of periodicals and books. Altogether the new journal

promises to be valuable. It is to be hoped that in future numbers it will be possible to devote more space to really new scientific contributions and observations, and that illustrations will be introduced. The *Zeitschrift für Criminal Anthropologie* may then be able to hold its own with Lombroso's *Archivio di Psichiatria* and Lacassagne's *Archives d'Anthropologie Criminelle*.

Homicide in the United States.—Remarkable evidence of the development of the study of criminality in Italy is furnished by an admirable and thorough monograph on the above subject just issued by Sig. Augusto Bosco, a leading criminologist and statistician ("L'Omicidio negli Stati Uniti d'America," *Bulletin de l'Institut international de Statistique*, tome X.). In six extremely compressed sections, and two appendices, the whole subject is here dealt with in probably a far more comprehensive and masterly fashion than it has ever been treated in America. The first section deals with legislation, the conception of homicide, its species and varieties, and the differences between American and English law. The second is concerned with the frequency and causes of homicide, its increase and a comparison with European countries. A discussion of the racial influences affecting homicide in the States is followed by a similar discussion of geographical distribution, and it is shown that while the racial influence is very marked—as shown by the predominance of homicide among the negro element, the Irish, Italians, etc., the minimum being furnished by the Scandinavians—it is not easy to show any climatic influences in the prevalence of homicide in the States, since the greater amount of homicide in the south may be eliminated as due to racial factors. The biological and social conditions of homicidal offenders are then studied, and finally the question of repression. The appendices describe the various kinds of homicide recognised in the different States, as well as the variations in the laws of the States, and must have involved considerable labour.

The author has studied the question on the spot, and his work seems to display great accuracy and precision. Occasionally he misapprehends slightly the significance of the facts, as when he quotes the late F. Douglass as evidencing the American feeling against lynch law, in apparent ignorance of the fact that Douglass was himself of black race, and scarcely representative of white opinion.

A Study of 265 Criminals.—Professor Ottolenghi, of Siena—one of the ablest and most active of the workers who have been trained by Lombroso, and adhere to his views—has lately published under the above title an analysis of the cases which have been studied in recent years under the influence of Lombroso, and to a considerable extent by Ottolenghi himself. It is, therefore, scarcely a study at second-hand, and deserves notice ("Novi Studi su 265 Criminali," "Gli Epilettici Studiati in 265 Processi Criminali," *Archivio di Psichiatria*, Fasc. 2-3,

Vol. xviii., 1897). The material includes not only a large number of cases investigated by Rossi, another very able disciple of Lombroso's, but also 63 reports by other medico-legal writers of position, and altogether may be taken to represent the most reliable results obtained by strictly Lombrosian methods. All the separate cases have been published between 1880 and 1896 in the *Archivio di Psichiatria*.

The 265 cases in question, as they came before the courts, included on subsequent investigation—putting aside 25 women—40 who were insane, 24 epileptics, 176 delinquents (of whom 56 were epileptics). Of these 176 criminals, 60 (or 33·7 per cent.) are estimated as born criminals, 102 (or 58·4 per cent.) as criminaloids, 12 (6·9 per cent.) as occasional criminals, and two (1·2 per cent.) as criminals by passion. Under the head of "Criminaloids" are included those persons who are predisposed to crime, but in whom environment plays the chief part; they easily adapt themselves to prison life, and become habitual criminals. In classifying the cases anthropologically, according to the amount of physical deviation from the normal, Ottolenghi makes three degrees: (1) the complete degenerative type with more than five anomalies; (2) the incomplete type, with more than three; and (3) the normal type, with less than three. All such classifications are somewhat arbitrary, and Ottolenghi admits that he takes chief count of cranial abnormalities, of these only the most marked, and especially those which constitute Lombroso's "criminal type." This term, he is careful to explain, he uses in no precise sense, but as "an anthropological synthesis, the expression of an *ensemble* of special degenerative characters." The complete degenerative type (which appears to correspond with Lombroso's "criminal type") was found in 86 out of 229 cases, or in 37 per cent.—a rather high proportion.

The physiological examination showed that abnormal obtuseness to pain, measured by Du Bois-Reymond's electric apparatus, existed in 61 per cent. of the 128 cases in which this point was investigated. Obtuseness of general sensibility was found in 51 per cent. The two sensibilities were frequently not parallel; this was very clearly shown in the later observations made with the more delicate Edelman apparatus. Tactile obtuseness was found in 35 per cent. of 156 cases, and was found to be fairly independent of general sensibility and sensibility to pain.

All degrees of intelligence were found. Putting aside the insane cases (which it is proposed to deal with separately) there were 12 of distinctly superior intellect (including a naturalist of some position, a mathematician, esteemed for his original work, a philosopher, etc.), and 13 of a very low grade of intelligence, without being imbeciles; the remainder were intelligent in proportion to their social position and occupation. Ottolenghi considers that this result confirms the independence of intelligence and moral sense; at the same time he points out that the majority

of cases exhibited in their lives and criminal acts a reckless lack of foresight and thought "which seem symptoms of partial imbecility."

Anomalies of the sexual instinct were found in nearly all the born criminals, and most of the criminaloids. Acts of valour, or of "real heroism," are noted as being more common than among ordinary persons; this is put down to obtusity to pain and reckless disregard of life.

In the second paper the epileptics are studied separately. There were 80 epileptic cases, or 30 per cent. This is a large proportion, corroborating Lombroso's well-known view. It is necessary to remember, however, that epilepsy is here taken in a somewhat more extended sense than is usual. There were 31 cases of motor epilepsy; 78 of "psychic epilepsy" (the two groups overlapping); and the various forms of psychic epilepsy were as follows:—Vertiginous, 20 cases; unconscious and automatic, without violence, 2; ambulatory automatism (procursive epilepsy), 16; so-called *iracondia morbosa epilettica*, 25; violent psychic attacks, leading to crimes of blood (*raptus*, crepuscular state), 13; purely intellectual psychic epilepsy, 2. Not everyone would regard all these cases as epileptic. The definition of epilepsy, suggested by Ottolenghi himself, is as follows:—"A functional degenerative syndrome, characterised by *convulsion*, which takes, more or less intensely, one or other of the following forms: motor, sensory, or psychic (intellectual or emotional) convulsion, according to the character of the individual in whom it is manifested." The "complete degenerative type" was found in 45 of these cases, or in 54 per cent., degenerative characters being more numerous in epileptic criminals than in either epileptics or criminals in general.

NEUROLOGICAL RETROSPECT.

New Type of Crossed Hemiplegia.—In the *Nouvelle Iconographie de la Salpêtrière* for May and June of last year, Dr. Anna Goukovsky, of Odessa, describes under this title a very interesting case of paralysis with wasting of one side of the tongue accompanied by paralysis of the opposite side of the body except the face. The combination must be an exceedingly rare one, although it is perhaps a pity to multiply types and not to regard the symptoms as simply determined by a somewhat unusual site of the lesion and its limited character. The patient was a man of 60 without anything significant in his family or personal history. There was no evidence of an attack of syphilis. On 1st December, 1893, at 10 a.m., he suddenly felt unwell, and this feeling was soon followed by vertigo and sickness. He did not en-

tirely lose consciousness. Twenty minutes later it was found that he had lost the use of his right arm and leg, but the face was unaffected. There was no aphasia, but there was some difficulty of articulation. On examination later it was found that the left half of the tongue was wasted and was the seat of fibrillary contractions, and that on protrusion it deviated distinctly to the left side. The two sides of the face were unaltered and similar in appearance, and the arm and leg on the right side were paralysed and contracted. The reflexes were exaggerated, but the rigidity on the right side prevented them from being easily elicited. There was no albuminuria. There was a gradual failure of strength and of intellectual capacity, trophic disturbances developed, and the patient succumbed about 12 weeks after the first onset of the symptoms. At the necropsy the important changes were those found in the medulla oblongata. The posterior aspect of this presented nothing unusual except that the left half was smaller than the right. On the anterior aspect there was evident great diminution in the size of the left half as compared with the right, and the part of the pyramid on the left side at the inferior part of the olive was distinctly atrophied. The *pia mater* over these was distinctly hyperæmic and underneath there seemed to be fluctuation. The roots of the twelfth nerve on the left side were thin and small compared with those of the right, and the arteries at the base presented changes resulting from chronic *arteritis deformans*. Further examination revealed the existence in the bulb of a patch of degeneration in the region of the left olive. This structure itself was almost entirely destroyed, and the process which had caused this had involved also the roots of the hypoglossal nerve. There was in the cord the usual descending degeneration, and the lesion in the region of the left olive was apparently the result of changes in the vessels and consequent blocking, complete or partial, of these. The case is very interesting as affording clinically an example of a rare combination of symptoms, a combination, however, which the situation of the lesion adequately explains.

Hæmatomyelia of the Conus Terminalis.—A clinical lecture was delivered in May, 1895, by M. Raymond, at the Salpêtrière on this subject. A man of 35 was one day in August, 1893, stooping down gathering fruit when he was suddenly seized with a violent pain in the lumbar region. He fell down at once and lost consciousness for several hours, and when he came to himself he found himself in bed with severe pains, and so sensitive that the contact of the bed clothes was sufficient to cause intolerable agony. Delirium came on the same evening and lasted for two days. He went to hospital, and slowly improved, so that in 37 days he was able to leave it. Six weeks after the onset of his illness, the hyperæsthesia had disappeared and the pains were restricted to the lumbar region. There had been retention of the urine,

necessitating the use of the catheter, but at the end of a month this was replaced by incontinence. The catheter is said to have been felt the first time it was passed. On admission to the Salpêtrière in October, 1893, he was troubled with constipation and there was retention of urine, but no trouble at all in walking. He was able to go out in the following April and return to work, and he only experienced the acute pain in the loins when he was excessively bent. He returned in March, 1895, and was found to have the power of executing all the movements of the lower limbs with force and exactness. There was no feebleness, inco-ordination or atrophy, and no peculiarity in the gait. There was a feeble kneejerk on the right side and none could be elicited on the left. In contradistinction to this comparative integrity of motor structures there was evidence of considerable interference with sensory function. There was a curiously symmetrical area of sensory impairment, this area embracing both buttocks and reaching the middle line at their level. It also affected the skin of the perineal region, and of the scrotum and round the anus, and the area was continued downwards on the back of the thigh as far as the apex of the popliteal space, where after gradual diminution it reached a point on each side. There was also insensitiveness of the mucous membrane of the urethra bladder and anus, so that the patient was unconscious of the passage of urine or a catheter, and was also unaware when a motion was passed. There was also loss of the usual sexual sensations, although erection and ejaculation both occurred. The lecturer then proceeded to discuss the diagnosis in reference to the nature of the lesion and its situation. As to its situation, undoubtedly similar symptoms might be produced by a lesion of the cauda equina, although it would not be likely that the lesion would be so accurately limited as in this case. The bilateral symmetry of the condition, the absence of motor symptoms, and the peculiar restriction of the symptoms to the area described, suggested an intraspinal origin in the terminal part of the cord where the third and fourth sacral nerves for the innervation of the bladder and rectum are given off. Further a case with such a localised lesion has been described by Oppenheim, and in that case the symptoms were practically identical. As to the nature of the lesion, the sudden onset of the symptoms during exertion point to the likelihood of a small hæmorrhage occurring during exertion, although it should be borne in mind that such sudden onset has been found associated with the presence of tumour, and under such conditions the sudden onset was probably determined by the occurrence of a hæmorrhage into the tumour. In this case there was nothing to indicate the presence of such a growth. In regard to prognosis the author thinks that as a rule in such cases of limited lesion in the cord the symptoms are apt to undergo aggravation, whereas if the lesion is in the cauda equina gradual improvement is to be looked for. On the other

hand the conclusion that the lesion is an intraspinal one precludes any hope of help from operative procedure. Had it been determined that the morbid condition existed in the nerves of the cauda equina an exploratory operation would certainly have been justified.

Monatschrift für Psychiatrie und Neurologie herausgegeben. Von Prof. Dr. C. WERNICKE in Breslau und Prof. Dr. TH. ZIEHEN in Jena. Band i., Heft 1, January, 1897. This is a new German periodical devoted to insanity and neurology. It is in a large 8vo form, and the first number contains 98 pages. It is published at Berlin, but may be had at Williams and Norgate, and the yearly subscription is 32s. In the opening number Dr. Wernicke reviews the questions which at present most attract the attention of neurologists. He bases his hope of building up a pathological and anatomical groundwork for mental affections upon studies such as those of Weigert upon the neuroglia, and those of Nissl upon the nerve-cells, rather than upon unsafe speculations like those of Flechsig, who assigns separate centres in the cortex for the intellectual faculties. Wernicke himself lays much stress upon the observation that a great part of the cortex has no fibres passing into the corona radiata, and is thus without direct connection with the centripetal and centrifugal tracts of the spinal cord. This seems to indicate that these portions of the grey matter discharge psychical functions.

The first paper, which contains 34 pages, is on the "Localisation of Choreic Movements," by Dr. Bonhöfer. The author, from observations of a single case described at length and a full review of the literature of the subject, claims to have shown that in all cases of chorea caused by circumscribed lesions in the encephalon, the fibres of the crura cerebelli are affected, and that in disease of the cerebellum there are choreic movements or motor derangements similar to chorea. This is in accordance with what we know of the functions of the cerebellum. We have reason to believe that in voluntary movements there is not only an impulse descending from the grey matter of the cerebrum, but also a series of accompanying processes in the cerebellum and basal ganglia, tending to guide the direction of the movements ere the motor stimulus passes down the cord. It is the cerebellum which regulates the proportional innervation of the various and antagonistic groups of muscles necessary for the proper execution, and which gives the measure of the amount of muscular force to be used for the aim proposed.

Dr. Bonhöfer discusses the various views of Charcot, who believed the essential lesion of chorea to consist in disease of a particular tract of the corona radiata; the view of Gowers, who placed the lesion in the optic thalami; and that of Kahler and Pick, who attributed the choreic motions to irritation of the pyramidal nerve paths.

The second original article gives the result of Dr. Wilbrand's careful studies with the perimeter upon the range of vision when the eye has been in darkness and varying lights.

The third article is a translation of a paper in the *Revista Micrografica*, by Ramon y Cajal, on some cells which he has observed in the cerebellum. They are found clustering round the large nerve-cells, and are believed to belong to the neuroglia.

There are well-written reports of the meetings of psychologists and neurologists in Munich and Frankfort, and several reviews of books on insanity.

Both the writing and the illustrations are good, and if carried on in the same manner and spirit, this periodical will take and keep a high position in the medical literature of learned Germany.

Die Irrenpflege, herausgegeben. Von Dr. KONRAD ALT. Carl Marhold, Halle. Price six marks yearly. 1st April, 1897.—This is a new monthly, which is to be devoted to the practical care of the insane and the management of attendants, upon whose intelligence and devotion so much depends. In the first article Prof. Meyer gives his experience about the abolition of mechanical restraint which he effected in the insane department of the hospital at Hamburg in 1865. Dr. Meyer records how he commenced his reformation by selling one hundred and fifty strait-jackets. One of the old attendants, deploring the infatuation of the physician, used to bribe a patient with cigars to allow him to put on the abolished tunic at night. This reminds us of a story told by another learned professor in Scotland of an old nurse in the Edinburgh Royal Infirmary who much disapproved of Dr. Laycock's new-fangled treatment of delirium tremens without the use of narcotics; she kept a bottle of some preparation of opium with which she nightly administered *quantum suff* to the patients committed to her care. While Dr. Laycock proclaimed the success of his new treatment the night nurse in a quieter fashion attributed the recoveries to her own remedies. There is no doubt that in the success of our treatment of insanity much depends upon the intelligence and fidelity of the attendants. We hope this useful little periodical will have the support which it merits.

Apparent Cure of Mental Disturbances in two Maniacal Patients, one of whom was attacked with typhoid fever, the other with profuse suppuration. *Archives de Neurologie*, 1896.—Dr. Charon has noted during the last four years that among 1,250 insane patients improvement of the mental condition has often occurred during the course of the following diseases: Facial erysipelas, pneumonia, pulmonary tuberculosis, anthrax, phlegmon, typhoid fever, smallpox, suppurative adenitis. Of 153 attacks 98 had acute or chronic mania or were demented, and of these 61 were improved mentally, but only for a comparatively short time. He gives a detailed account of a case of chronic mania which re-

mained perfectly free from all symptoms of insanity for about three weeks during and after a profuse suppuration in the face and neck; and of another case of acute mania of one month's duration, in which an attack of severe adynamic typhoid fever led to the sudden and complete disappearance of maniacal symptoms. An almost equally sudden relapse to the former condition was followed by a progressive amelioration. Dr. Charon draws attention to the analogy of the antagonism of other diseases, such as for example that of erysipelas for lupus, and shows that, as in his cases, this antagonism leads as a rule to an improvement which is merely temporary.

Two Observations of Vaso-motor Disturbances of Hysterical Origin. Archives de Neurologie, 1896.—Two cases under the care of Dr. Magnan at the St. Anne Asylum are described by Dr. Manheimer, in one of which a blue œdema alternated with a simple œdema of the skin which was slightly rose-coloured, and with an almost completely normal state of skin. During the intermediate stage there was simply a tingling of the fingers, during the stage of blue œdema there were shooting pains in the hands, which seemed to proceed from the bend of the elbow. In the other case there were found hyperidrosis, factitious urticaria on the anterior and posterior aspects of the thorax, and peculiar rigors or shiverings, during which an excessively marked goose skin was developed.

On a Case of Spasmodic Paraplegia produced by a Primitive Sclerosis of the Lateral Columns. Archives de Physiologie, 1896, No. 3, p. 630. Drs. Dejerine and Soltas describe a case of this disease which corresponds clinically and pathologically to the disease originally described in 1875 by Erb. It is remarkable how little pathological evidence has been adduced since Erb's original paper. Only two cases, one by Dreschfeld and the other by Strümpell, at all closely resemble the one cited—that of Dreschfeld presented degeneration of some of the cells of the anterior cornua in addition to the sclerosis of the pyramidal tract, and therefore had more relations to amyotrophic lateral sclerosis than to Erb's disease. In Dejerine's case the lateral pyramidal tracts were sclerosed as far as the upper part of the cord, and above this level they were normal. The sclerosis when seen in transverse sections was somewhat more extensive than the pyramidal tract. There was also a slight sclerosis in Gall's column in the cervical region, which suggested that there might be a transverse myelitis in the dorsal region, but no trace of this could be found on careful examination. No change could be found in the vessels or in the meninges. Therefore Dejerine and Soltas regard this as a case of primary sclerosis, i.e., as a primary degeneration of the nerve fibres in the pyramidal tracts.

Hereditary Syphilis of the Spinal Cord. Nouvelle Iconographie de la Salpêtrière. 1896.—Dr. Gilles de la Tourette states that hereditary syphilis may attack the cord at three different times of life.

(1) During intra-uterine life; (2) during infancy and childhood; (3) during adolescence and in advanced life. The first stage is characterised specially by diffuse inflammations of the cord and its membranes, somewhat comparable to the interstitial syphilitic hepatitis. If the child survives its birth a true sclerosis may attack the cord, either with or without a similar sclerosis of the brain. In childhood, and during adolescence, the brain and cord may still be affected by sclerosis, and there appears to be a special tendency to involve the cervical region. The mid-brain seems to be more often affected than the cerebrum.

As age advances the tissues become more and more differentiated. Infiltrations, especially in the form of gummata, may occur in the interstitial tissue around the vessels, or in the membranes, and endo-arteritis and endo-phlebitis also occur.

We have received the first five numbers of the *Medical Gazette of Costa Rica*. These journals are wide and liberal in their interests and well abreast of the times.

The July number contains the yearly report of the hospital of San Juan de Dios. In this report one learns that the total number of patients treated during the year has been 432; 312 of these were males and 120 were females.

Out of this large number of patients there were only six male alcoholics and no female patients of this class. Of epileptic patients there were only three male and one female admissions. Jacksonian epilepsy claimed one male patient. There were six cases of hysteria in women, and only one case of neurasthenia in each sex.

In the second Medical Congress of the whole of America there was a section devoted to "Mental Diseases and Diseases of the Central Nervous System." Up to the date of the last issue, Sept., 1896, the doings of this section had not yet appeared in print. As before stated, these papers are wide in their sympathies, and regard with interest events occurring in the older hemisphere, as, for instance, the case of Dr. Playfair and Mrs. Kitson is fully reported and duly commented upon.

In the foreign correspondence column America as usual easily carries off the palm for records. The *Medical Record of Wytheville* mentions the case of a girl of that town who, at the early age of 10 years, gave birth to a child which weighed 5lbs.

The practical application and use of the Rontgen Rays to medicine and surgery are fully described and illustrated, some of the shadowgraphs reproduced being exceedingly good.

ASYLUM REPORTS.

Some Registered Hospitals.

Barnwood.—The Committee make a naïve admission in their report. They state that so many patients have been maintained for nothing, and in the next sentence say that their general regulations (approved by the Home Secretary) expressly prohibit gratuitous admission of patients. It might be well supposed that they are eager for someone to tread on the tail of their coat. Anyhow we hope that they will not be penalised for such a gross infraction of their own regulations.

Dr. Soutar gives the particulars of an interesting case. In 1887 a lady was admitted suffering from melancholia. There was no change for three years. In the fourth year alternations of gloom and cheerfulness supervened, which continued for the fifth and sixth years. The patient was then moved to one of the cottages on the premises, where she did fairly well for a year. She then had a severe relapse, becoming suicidal, full of hallucinations, refusing food, incoherent, dirty, and indecent. After four months improvement supervened, and a good recovery was made eight years from admission. He also notes a case where, after nine months of acute excitement, followed by a period of rapid degeneration, the adoption of thyroid treatment was followed by complete recovery and discharge in six weeks from the commencement of that treatment.

Bethlem.—This institution is to be congratulated on at last having a very fine recreation hall.

The following paragraph is extracted from Dr. Percy Smith's report:—

I must not omit to notice the irreparable loss the hospital has sustained in the death of Dr. Hack Tuke. For many years we have had the advantage of seeing him at the weekly meetings of the Sub-Committee, at which he hardly ever failed to attend. His wide knowledge of mental diseases, his unfailing kindness and consideration for the patients in the hospital, and his familiarity with the difficulties and responsibilities of the medical staff in a hospital admitting so many acute cases, rendered his advice and counsel invaluable to the patients, the Committee, and the Medical Officers.

The immense number of private patients poured into Bethlem each year affords Dr. Smith opportunities for recording weak points in the 1890 Act, of which, as we know, he takes full advantage. The following extract reveals a serious danger, due, perhaps, more to the wrong reading than to the Act itself:—

Only 18 of the 115 certified patients to whom was given the "Notice of Right to a Personal Interview with a Justice" availed themselves of this right. For the first time since the introduction of this right into the Lunacy Act of 1890 a case occurred in this hospital in which, as the result of the report to the Commissioners in Lunacy by the Justice who visited the patient, his discharge was ordered by them. The facts briefly were as follows:—The patient had twice previously been under care in this hospital and had recovered. He was re-admitted under certificates which showed that he was hostile and dangerous

to his wife; he quickly improved after admission, and the Justice who visited him considered that he had recovered, and reported thus to the Commissioners in Lunacy, although the medical staff of the hospital considered that sufficient time had not yet elapsed for thorough recovery, and that, on discharge, he would relapse and probably be again dangerous to his wife. The Commissioners directed that if no further symptoms of insanity had shown themselves since the visit of the Justice, the patient must be discharged. He was accordingly discharged from certificates, but, as he was desirous of going to our Convalescent Home, he was allowed to remain as a voluntary boarder for that purpose. In a few days, however, he declined to follow my advice and was allowed to return home, there being now no legal obstacle to this step. Within a very short time after his leaving, hostility to his wife returned and he assaulted her, inflicting a wound on her head which might have had serious consequences, and the matter was put in the hands of the police.

The Justice who had visited the patient here, on being informed of the result of the patient's premature discharge, expressed his astonishment at the result of his report, and said that he had no idea that its effect would be to cause the patient's discharge, but that he thought the most it would do would be to specially call the attention of the Commissioners to the case, and he further said that he did not think that the majority of Justices were aware of the fact that their reports under such circumstances would have a like effect. The wording of the Act, however, obliges the Commissioners to "take such steps as may be necessary to give effect to the report," and it is very evident that in the existing state of the law the premature discharge of a patient on the report of a Justice, in spite of medical opinion, may be fraught with the most serious consequences.

The following is from the report of the Visiting Commissioners:—

Out of the whole number of patients and boarders under treatment here, roughly speaking a total of 250, only 65 pay towards the cost of their maintenance. We have much pleasure in noticing this fact, and thus showing that this is a hospital doing much charitable work for the middle-class persons of unsound mind in this country, and in no way a charitable hospital only in name.

We quote the above because it gives us an opportunity of making a few remarks about "charity," as displayed in some institutions other than Bethlem. The old saying that the left hand should not know what the right is doing in the matter of alms is by no means so ancient that it is not applicable nowadays. We do not mean that the public should not know that charitable aid is largely given in registered hospitals, for obviously the public must be informed of the fact in order that it shall be prepared to take advantage of it, and to aid by charitable donations where so much required. Further, there is every reason that honour should be given where honour is due for the great blessing conferred on the middle-class insane. But we take leave to doubt whether the publication of the exact amount of aid given by any institution adds to the dignity of its Annual Report. No good reason can be given for assessing this at so many pounds, shillings and pence. On the other hand it invites critical questioning as to the correctness of the basis of assessment. The method adopted is to take the average cost per week of *all* patients, rich and poor, and then to assume the difference between that average and the payments of the particular patients, which may be below the average, to be the

charitable aid. This average can hardly be a correct basis, for is it possible to maintain that the costs of all patients are exactly equal? Can it be supposed that a patient who pays 5s. a week gets exactly as much as he who pays £5? Even if it were possible to suppose such a thing, does a hospital which, unlike Bethlem, has next to no endowment, and which pays its way, confer the benefit? Are not the real benefactors those patients who, by paying the excess, support the poorer ones? This consideration will be more striking when, as is not uncommonly the case, the hospital itself, after the richer patients have paid for the poorer ones, finds itself with a handsome profit on the workings of the year. We make these remarks in no carping spirit, for such a spirit is not admissible in regarding the beneficent work done, but we cannot but think that the feelings of others must be a little jarred, as ours are, by a too particular detail, which to some may appear to be of the nature of a vaunt.

Lincoln, The Lawn.—A very suitable and handsome recreation hall has been built and opened here. The report is embellished with some excellent illustrations of this and other parts of the institution. The recoveries of the female patients reach the high rate of 87 per cent.

Nottingham, The Coppice.—The remarks which we made above as to the necessity for the public knowing of the work done in registered hospitals are warranted apparently by the following extract from Dr. Tate's report:—

As considerable ignorance as to the nature and object of this hospital appears to exist among persons in the town and neighbourhood, I take this opportunity of stating that it is in no way a private venture or speculation, as was alleged during the discussion on the site for the new Workhouse, but that it is the second oldest benevolent institution in Nottingham, and was commenced more than a hundred years ago for benevolent purposes, and not for pecuniary gain, its chief object being to afford to the poorer members of the upper and middle classes mentally afflicted the best medical treatment, care, and nursing at a moderate charge.

The workhouse question above referred to was a serious danger to Dr. Tate, who was threatened with the planting of such a building with its infirmary capable of holding 1,500 close to the asylum. He and the Committee energetically moved the Commissioners and Local Government Board, with the result that the official inspector of the latter found the site to be unsuitable, and the danger was averted.

St. Andrew's, Northampton.—The death-rate reached the abnormally low rate of 3 per cent. on the average number resident. The Commissioners speak with approval of the large number of the patients who are induced to work, an average of 82 of 172 males being employed in the gardens, shops, or office, and about the same proportion of females in the usual directions—sewing, laundry, etc. Structural alterations to a considerable extent were in progress.

St. Ann's Heath, Virginia Water.—Who shall now say “*Magna est Veritas, et prævalebit?*” *Magnitas* has not been conclusively shown of late to be an attribute of *Veritas*, and as to prevailing, there are no signs of giving in on the other side, for, no doubt on the principle of its being necessary to overcome evil with good, Dr. Phillips writes: “I am confident that no other hospital for the insane is in better order, has a more efficient staff, or is better managed, and with more consideration for the patients than *St. Ann's Heath*.” We sincerely hope that the shadow of affliction will soon pass away. Dr. Phillips is much impressed, and rightly we think, with the desirability of assistant medical officers having some athletic propensities. He holds that the work of such an officer is monotonous, and cannot safely be continued without fear of mental and moral deterioration. This fear, he says, is much less real in the case of a man with healthy sporting and athletic instincts. For our part we cannot but admit that the undoubted spread of athleticism in the younger generation of medical men has worked great physical and social good without in the least way hindering the general advance of scientific knowledge, but we cannot admit with Dr. Phillips that it is the first essential.

Some Scottish Royal Asylums.

Aberdeen.—The new hospital was opened last August, and has proved to be worthy of the great amount of thought bestowed on it. The managers now have to face no less a task than reconstruction of the main building. The patients are stated to have increased from 286 in 1866 to 742 at the present time.

Dundee, 1895.—The managers have, under the advice of Dr. Rorie, taken a lease of a large mansion in the neighbourhood of the asylum at a reasonable rent. This judicious step has been followed by distinct improvement in the mental conditions of the private patients transferred thereto. It accommodates 19.

Edinburgh, 1895.—The great event of this year was the final transfer of patients from the old East House to Craig House. Dr. Clouston has the satisfaction of recording that the change of scene and surroundings was acceptable to each one of those transferred. The whole working of the new institution is warmly commended by all who have had to pass opinions on it. The East House has been pulled down, and the land sold for rather more than was anticipated. Many members of the Association will no doubt miss, on revisiting the scene of former labours, a very dear but very ugly old friend. The best intentions of the earlier part of the century, as represented by the asylum buildings now gone, would be scouted nowadays, and no better measure of progress can be found than is supplied by the comparison with them of the palatial structures that take their place. The improvement has met with its reward in a marked increase in the number of applications for admission.

Glasgow.—This asylum, like those above, has its change to report—the gradual removal of all pauper patients in favour of private and charity cases paying low boards. Less than one-eighth of the patients are now rate-paid. The managers have unfortunately occasion to point out that revenue is less than expenditure, and they state with regret that legacies are decreasing in number and amount.

Perth, James Murray's.—Dr. Urquhart expresses the opinion that early discharge of recovering cases is of almost equal importance to early treatment. He thinks that in face of a threatening relapse in a convalescent patient it must be a matter for anxious consideration whether immediate removal from asylum surroundings is not the best course in the patient's interests. He admits, of course, the necessity for watching the interests of the public. In regard to long standing cases he fully believes in the efficacy of change of asylum, and instances two such cases recovering after transfer to him from other asylums, and one case after transfer from him, these occurring in the year under report.

Montrose.—Dr. Howden gives a list of cases dying soon after admission. Of these one died nine days, another two days, and yet another two days after admission—the last two from institutions. He hopes that this practice of sending patients in a dying condition will be checked by the emergency certificate now requiring the certifier to state that the patient is fit for removal. In this respect England in borrowing the urgency certificate from Scotland has led the way, though complaints on the same grounds from English Asylums tend to show that the certificate is not universally protective.

We do not know whether the following case has been preserved in medico-psychological literature, but it certainly is worth preservation, and may be read in connection with a very similar but more fatal occurrence in Ireland a few months back. It was originally recorded in the *Glasgow Medical Journal* by Dr. Havelock, and is related by Dr. Howden in connection with sudden outbreaks of insanity.

In a small country town there resides a family of well-to-do artisans, with a history free from any trace of insanity. The parents are in the prime of life, while their four sons and five daughters are adolescents. The favourite daughter, a shop assistant in a neighbouring city, returned to her home in a state of great mental perturbation; she locked herself into her bedroom for several hours. When interrupted by her friends, she was found to be in a state of religious ecstasy, declaring she had communed with God, who had revealed to her that she was about to die, and that Christ would appear to receive her into His arms.

Moved by her earnest protestations, the family gathered round the bedside, and sent off for her father and brothers, who were working in neighbouring towns; and, influenced by the contagion of her example, began also to engage in prayer and anticipate the immediate coming of Christ.

When the father arrived on the scene, he found the whole family in a state of great religious excitement; his house had been divided by them into a part they called "heaven" and a part called "hell," the mother, who did not com-

pletely fall in with their views, having, of course, been consigned to the latter division.

Attempts by the parents to reason with and control their children were unavailing; unable to stem the torrent, the father and mother were soon as excited as the rest. For several days matters went on in this way; little food was taken, there was no sound sleep, day and night were spent in religious exercises in preparation for the immediate coming of Christ. The mental symptoms in all consisted of a state of ecstasy, with hallucinations of sight and hearing, and an overpowering desire to pray and preach.

At the end of a week the father came to his senses, and made strong efforts to induce his family to resume their ordinary mode of life. During an altercation which ensued, the eldest son jumped through the window in a semi-nude state, followed by the daughter who had been the originator of the mischief. Both were at once arrested by the police, and having been certified to be insane, were consigned to the Montrose Asylum.

The male patient laboured under hallucinations of sight and hearing, was violent and restless, but recovered in a fortnight; the female was more coherent but with similar symptoms. She recovered in a few months. The others soon quieted down at home when the ringleaders were removed and have remained well.

Some Scottish District Asylums.

Argyll and Bute.—Dr. Cameron mentions as a remarkable fact that while the number of patients chargeable to Argyllshire parishes have increased since 1882 to the present time from 265 to 325, the number from the county of Bute has remained absolutely stationary. Why this should be, and why the total population should have increased only by about 15 per cent. in 14 years, would form an interesting subject for study and explanation.

A marked improvement in the nursing of patients has followed the institution of the regular course of training, and Dr. Cameron reports that the attendants take a greater interest in their work.

Fife and Kinross.—Dr. Turnbull gives some account of his new hospital building and states that the male sick-room has been entirely staffed by nurses by day, to the great comfort of the patients and without any drawback.

Inverness.—The proportion of readmissions to total admissions was 35 per cent. Dr. Keay explains this high ratio.

The increase is doubtless in great measure to be accounted for by the efforts made in recent years to check the growth of the asylum population by boarding out chronic cases. Some of these people break down from time to time and are sent back to the asylum. The regret with which one looks upon a high rate of readmissions is tempered by the thought that at any rate it is pretty good evidence that patients are not detained in the institution longer than is necessary for their own welfare or for the public safety.

For the same purpose of freeing the asylum of as many cases as possible, 28 were liberated on trial with fairly good results.

Lanark.—Dr. Campbell Clark issues his first report of the year's work at this new asylum. It is already within sight of being filled, and plans for additional accommodation for 300 patients have been prepared and sanctioned, and the work was to be commenced at once.

The total cost was £174,000, including cost of the estate, buildings, lighting with electricity, furnishing, etc. The actual number built for was 500, but the administrative departments were calculated for a higher number. The cost per bed is not a low one, but when the matters provided are reckoned up, it cannot be said to be high. For instance two separated blocks for male and female officers are found, containing day-rooms for the attendants, as well as sleeping accommodation for some of them, and all the superior and domestic staff. Twenty-five cottages for married attendants have been built.

Each of the Visiting Commissioners speaks warmly of the liberal manner in which things have been done. In little matters, as easy-chairs in plenty, in having dormitory blinds double so as to exclude light more thoroughly, in having special admission and examination bed-chambers opening out of bath-rooms, etc., it is easy to put away a lot of money without presenting a great effect to a casual observer. But to those who know what these comfortable things mean to patients it is otherwise, and more satisfying than gaudy halls and so forth. The spending a large sum in this way is a credit to the liberality of the Committee and rate-payers, and the successful application of that sum is a credit also to Dr. Clark's enlightened organisation.

Midlothian and Peebles.—Ninety-three admissions into an asylum of about 250 average population are undoubtedly in excess of the usual proportions. And they were not of a cheerful nature speaking from a Superintendent's point of view—12 with fixed delusions or hallucinations, 12 with organic brain disease, 8 with senile decay, 5 with congenital imbecility, 2 with epilepsy and 11 many years insane—50 in all, form a heavy total of incurable insanity. We note that at last Dr. Mitchell is to have an Assistant Medical Officer. We hope that he will now find it possible to undertake the preparation of the Association's Tables.

Perth.—The Commissioners speak favourably of Dr. Robertson's endeavour to dress the patients in clothes of different shape and pattern, the clothes being made as far as possible for each patient. Patients are thus enabled to go outside the asylum without being recognised as inmates. It is reported that, as was to be expected, self-respect has been much increased. One-third of the male patients are on parole in the grounds, without in any case a forgetfulness of the pledge given. The two new convalescent houses—Pinel and Tuke Lodges—have been opened with becoming ceremony, and so far have been found to fulfil the purposes for which they have been erected.

Roxburgh, Berwick, and Selkirk.—The water question which has troubled the Committee for so long has at last been settled after much argument, and provision has been made on Dr. Carlyle Johnston's recommendation for a daily average supply of 60 gallons per head.

Stirling.—This asylum is becoming quite insufficient for the needs of the district from which its patients are drawn. The total admissions seem to maintain from year to year the same ratio to population. This ratio is 10 per cent. lower than the general average for Scotland, which is 72 per 100,000 population. The ratio of readmissions to population shows a marked tendency to rise of later years, and as a consequence the proportion of first admissions is lessened.

Craig Colony and Chalfont Colony for Epileptics.

The report of the Craig Colony for epileptics, on the first eight months of its working, from February 1st to October 1st, 1896, is necessarily of extreme interest. The colony in that period has admitted 145 persons, viz., 69 men and 76 women. A few of these came from their own homes, but most of them from the county poor and almshouses. All were declared to be indigent and were admitted on the official application of a Superintendent of the poor. It is pointed out that there exist in the asylums of the State about 150 and in the poorhouses about 600 more of this class who are eligible for admission to the colony.

The Managers urge the need for extension, and the liberal manner in which the colony is treated may be judged from the fact that they ask for appropriations for additions and improvements in the coming year, to the extent of 256,000 dollars. With these additions they estimate that accommodation will exist for 500 persons. Already, however, they claim that the colony has produced fifty per cent of the cost of maintenance.

The institution is provided with a double water supply, one for drinking and the other for general purposes.

The medical report claims a general improvement in mental and bodily health, the latter manifested by increased weight and by a diminution of fifty per cent. in the number of fits. Whether this last is due to improved general conditions of occupation, diet, etc., or to medicinal means is not clearly defined.

Flechsigt treatment was tried in twelve selected cases, six of whom improved. Four were treated by thyroid, of whom two were markedly improved, and bromide and chloral were given in small doses to a large number.

The dentist reports, amongst other work, the filling of 318 teeth and the treating of 124 of the 145 patients.

This dental care, with the improved dietary, would without doubt exercise a most important influence on the general health. The care of the teeth is too little attended to in the majority of our institutions, and few (Bethlem is one of the exceptions) have regularly attending dentist.

The future progress of this colony will be watched with extreme interest; both in regard to its success in dealing with so wide a

range of epilepsy (including apparently the epileptic imbecile, the pauperised epileptic, and even the quiet insane form), and also in reference to the question of economy.

The Chalfont Colony compares very interestingly with the preceding; in place of being established and financed by a State, it has been established and supported entirely by private charity. Instead of relieving those who have already fallen so low as to be a burthen on the community, it aims at saving those who are in danger of this fate. It is to be regretted that the Chalfont Colony is not supported in a more liberal manner than has hitherto been the case.

The third annual report contrasts widely with its American congener, in the small amount of statistical information in regard to the number and movement of the colonists, but the general information in regard to occupations, amusements, alterations, and improvements points to a very satisfactory state of activity.

The general healthfulness of the colony is strongly evidenced, and the great improvement in the special condition of the colonists which is reported is no doubt justified.

The garden account shows a loss of £101, and as manure figures as an item of expenditure for £53, this is not to be wondered at. In a working colony, on such a soil and with such water supply, a good system of earth closets would surely obviate the necessity of this expenditure.

The ultimate success of these colonies depends on their being very nearly self-supporting, so that the first departures in economic administration are most important. The economic manuring of the farm must be a fundamental question in their economy, and it is to be regretted that a costly and wasteful system of sewerage is in process of being carried out here.

It will form a permanent tax on the expenditure of the colony, and will certainly not render the farm work more attractive to the colonists.

Transactions of the American Medico-Psychological Association.
Annual Meeting held in Denver, 1895. Pp. 252. Published by the Association.

Our American colleagues differ from us in two ways; they publish a separate volume, containing the papers read and discussions arising thereon at their annual meetings; and they secure the Governor of the State to bid them welcome and open the proceedings with due pomp. There is something in both ideas.

The Address of the President, Dr. Cowles, had for its subject the Advance of Psychiatry in America. Partly a review of progress in the past, it sketched out the lines on which, in his judgment, reform and improvement should take place. It follows closely the best ideas that have been put before our Association

from time to time. In comparing the work of the general physician and that of the alienist he puts the point neatly.

The general physician finds that in treating the disorders of the personal man he has constantly to reckon with him as also a rational being whose organic machine is his instrument; and so far every such physician is a practical psychologist. But the alienist as a general physician is especially concerned, in his wider field, with the whole man, for psychiatry deals with the mind of the man and must seek for causes of its disorders in the whole man.

Dr. Wise, the new Chief of the Lunacy Commission of New York, in a way supplemented Dr. Cowles' address by a paper on Medical Work in Hospital Wards.

The Dietary of the New York State Hospitals was discussed by Dr. Pilgrim. It will be remembered that the Commission of that State consulted Dr. Austin Flint with a view of producing a specimen diet sheet for patients. We are not at all satisfied that such a work should be taken out of the hands of the responsible physicians who are in charge, and we gather that the latter are of the same opinion as a whole. Dr. F. Hoyt was amusingly critical.

I think that after all the best test of a man's requirements is that his appetite be satisfied, except in a few cases where there is a tendency to gormandise. When a man says he has enough that is the test for that particular patient. You may prescribe a scientific dietary, but I never saw a scientific stomach. . . . The Commission in limiting the dietary to so much carbo-hydrates and so much nitrogenous food is apt to forget the necessity for stimulating the appetite by food prepared in a cleanly, pleasant way, with a savoury odour and served in an acceptable manner.

In connection with the latter Dr. Gilman claims perfection, as near as it can be attained, for his system of having a most experienced head-cook, who, however, does little cooking herself, being responsible for its being well done by her subordinates, and then properly served.

Space limits forbid our taking particular note of many excellent papers—such as those by Drs. Clarke and Busch, on Thyroid Treatment, which being, however, two years old, are now ancient history in this rapidly moving department of science; by Dr. Daniel Clark on the Plea of Insanity in Criminal Courts (of Canada); by Drs. Bannister, Alder, Blumer, and Berkeley, on various aspects of the relations of alcohol to insanity, etc., etc. But there is one paper by Dr. Rohé, of the Maryland Hospital for the Insane, on Pelvic Disease in Women and Insanity, which is worth careful attention and criticism. He relates the fact that a State Commission in Lunacy rudely suppressed attempted imitation of his operations on women, because such operations on the insane are "brutal and inhuman, and not excusable on any reasonable ground," as well as "illegal and unjustifiable." Such views as applied on general principles to particular cases are clearly wrong, though it may be that they are admissible as against wholesale experimentation. Dr. Rohé speaks with the most perfect candour, pointing out all that may be said and has been said

against his practice. The law of the United States does not seem to be very clear, taking into consideration the opinions for and against, which are related. But he, on his own account, summarises thus:—

1. The act of a lunatic during a sane interval has in law the validity of a sane person; therefore a lunatic, in a sane or lucid interval, is as competent to consent to a surgical operation of any kind as is any person.

We entirely and emphatically dissent from this view. Who can prove to perfect satisfaction the sanity of a patient? Even in our most demonstrable recoveries are we sure that there are no latent warps? Are we sure that will and judgment are firmly re-established? In no case of gravity should the consent of a patient, standing alone, be acted on as long as that patient is under *duress*, so to speak. Freedom of choice should be anticipated by freedom of person. If a patient is well enough to make a valid choice he should be well enough to be discharged.

2. The State . . . appoints a Committee as the legal guardian of the person, who has legal power to consent to the performance of an operation upon the lunatic if it should be for the latter's benefit.

This is sound sense. The Committee or nearest friend is the only person who can either legally or morally give valid consent, except, of course, in an emergency, when the ordinary rules of the profession apply.

3. The lunatic may, even if there is no absolutely lucid interval, be competent to give consent to an operation if he understands its object and consequences. It is the general principle of the modern law of insanity that the validity of any act of a lunatic depends upon his capacity to perform the particular act in question. Thus it has been decided that a lunatic is capable of being a witness, although not of entering into a covenant. The law would probably not exact so high a capacity in a lunatic to consent to a surgical operation as it would to enter into a contract. In these cases, however, the physician or surgeon must assume the responsibility of determining whether the lunatic has the degree of capacity requisite to consent. Manifestly the surgeon is here placed in a delicate position, from which he has no right to shrink, etc.

To us this appears to be quite illogical and perilous reasoning, and we have no hesitation in saying that it will not be accepted for a moment by those who have any medico-legal experience. Dr. Rohé's position seems to be untenable all round. If a patient show evidences of the need of an operation the last man to decide in cases of doubt should be the person placed in charge primarily for another purpose. For his own protection he should seek to be covered by independent medical opinion. And when that is obtained he would be wise to leave the operation to others. Dr. Rohé, when he says, "The personal equation which governs every observer's work has not yet been determined," supplies the best possible argument against the person in legal charge, the decider and the operator being one and the same individual. We have nothing to say against operations of any kind being performed on the insane for just the same reasons that make operations on the

sane justifiable or necessary. But we protest against removal of uterine appendages for any other reason. The day for indirect treatment of mental and moral deficiencies by heroic operations has gone by. Attempts in this direction have been made from time to time, but comprehensive psychology and good sense have hitherto triumphed, and will continue to do so. The cortex, which as Clouston says, must always be reckoned with, will prove to be the best protector of the reproductive organs against the over-eager gynæcologist.

The statistics supplied by Dr. Rohé are startling. He makes a systematic examination of the female admissions, and was enabled to state "that fully 60 per cent. of the women admitted have some lesions of the genital organs or pelvic viscera. Many of these are of so slight a character as to require no treatment, but others can only be relieved by some operative interference."

In four years' practice at the Maryland Hospital "one hundred women were examined, in forty of whom the local lesions found were believed to justify operation. In thirty of these, abdominal section, with removal of the uterine appendages, was practised. Of the thirty abdominal sections there were cured, physically and mentally, ten; decidedly improved, four; unimproved, thirteen; died, three."

The volume is well got up and printed, and is provided with an index.

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

GENERAL MEETING.

A General Meeting was held at the Rooms of the Association, 11, Chandos Street, London, W., on 18th May, under the presidency of Dr. Julius Mickle. The following Committees met previously:—Handbook Committee, Parliamentary Committee, Educational Committee, Council Meeting.

The following candidates were elected as Ordinary Members:—James Murray Renton, M.B., C.M. Edin., Assistant Medical Officer, County Asylum, Chester. Proposed by T. S. Clouston, James Middlemass, and Lewis C. Bruce. George Aubrey Townsend Fox, M.R.C.S. Eng., L.R.C.P. Lond., Assistant Medical Officer, County Asylum, Chartham Downs, Kent. Proposed by G. C. Fitzgerald, George Amsden, and John Turner. James Sinclair Tait, M.D., L.R.C.P. Lond., L.R.C.S. Edin., Medical Superintendent, Newfoundland Hospital for the Insane, St. John's, Newfoundland. Proposed by T. S. Clouston, James Middlemass, and Lewis C. Bruce. David William Wiseman, M.R.C.S. Eng., L.R.C.P. Lond., Assistant Medical Officer, County Asylum, Melton, Woodbridge, Suffolk. Proposed by R. Percy Smith, Theo. B. Hyslop, and Maurice Craig. William John Richard, M.A., M.B., C.M. Glasgow, Medical Officer, Govan Parochial Asylum, Merryflats, Govan, Glasgow. Proposed by W. R. Watson, A. R. Turnbull, and Robert Blair. Francis Henry Edwards, M.D. Brux., L.R.C.P. Lond.,

M.R.C.S.Eng., Assistant Medical Officer, Camberwell House, S.E. Proposed by F. Schofield, J. H. Paul, and H. Hayes Newington. Bonner Harris Mumby, M.D.Aber., D.P.H.Cantab., Medical Superintendent, Borough Asylum, Portsmouth. Proposed by W. R. Brunton, H. A. Benham, and R. P. Smith. William Everett, M.D.Edin., Assistant Medical Officer, County Asylum, Chatham Downs, Kent. Proposed by G. C. Fitzgerald, George Amsden, and John Turner. Gilbert Aitken Welsh, M.B., C.M.Edin., Assistant Physician, Crichton Royal Institution, Dumfries. Proposed by James Rutherford, W. Ford Robertson, and C. C. Easterbrook. George Pratt Yule, M.B., C.M.Edin., B.Sc., Pathologist, Crichton Royal Institution, Dumfries. Proposed by James Rutherford, W. Ford Robertson, and Lewis C. Bruce. John Rutherford Gilmour, M.B., C.M.Edin., Assistant Physician, Crichton Royal Institution, Dumfries. Proposed by James Rutherford, W. Ford Robertson, and James Middlemass. John Marshall, M.B., C.M.Glasgow, Assistant Medical Officer, County Asylum, Bridgend, Glamorgan. Proposed by R. S. Stewart, H. T. Pringle, and D. Finlay. William Henry Butler Stoddart, M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Clinical Assistant, Bethlem Royal Hospital, S.E. Proposed by R. Percy Smith, Theo. B. Hyslop, and Maurice Craig. Charles Westbrook Grant-Wilson, L.R.C.P.Lond., M.B.C.S.Eng., Heathfield House, Streatham Common, S.W. Proposed by R. Percy Smith, Theo. B. Hyslop, and Maurice Craig. Samuel Lloyd Jones, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Colney Hatch, N. Proposed by W. J. Seward, C. T. Ewart, and E. W. White.

Dr. W. MORR, F.R.S., read a paper on "Some Points concerning the Degeneration of the Neuron," with lantern demonstration, and Dr. E. GOODALL described "An exact method for recording Deformities of the Hard Palate," both of which will be published in due course.

Dr. T. SEYMOUR Tuke read a short note on an action taken against him by a lady suffering from delusions of suspicion, for false imprisonment and illegal detention, damages being claimed to the amount of £20,000. The lady was admitted into Chiswick House in November, 1895, under urgency order, which was subsequently confirmed by the usual statutory order and certificates, and her stay there lasted (with one short interval at the end of January in which she evaded her parole) till March, 1896. In the beginning of this month relatives came from abroad, and announced their intention of taking charge of her, and ordered her summary removal. It was pointed out to them that there was a proper legal method of doing this, and every assistance was given them, and they were also warned that any attempt to exercise control would in all probability result in their losing what control they had. This happened apparently in about a week or less, and the patient (discharged "unimproved") was left to her own devices. In November, 1896, Dr. Tuke was served with a writ, and heard later that two other actions had been taken against the signer of the petition, and the lady's usual medical attendant. Steps were taken by Dr. Tuke's solicitors to act under the protective clauses of the Lunacy Act, and for making application to the High Court to stay the proceedings. Affidavits were sworn by all defendants, counsel instructed, etc. After much delay, the actions were heard in April, 1897, in Chambers by a Judge of the High Court, who, without hesitation, pronounced for the defendants, giving an order for the staying of all the actions with costs against the plaintiff. Dr. Tuke, in conclusion, said:—I do not wish to make any comments. It shows on the one hand how much trouble can befall us and anxiety hang over us, especially when we are confronted with cases of this kind, but it shows also (and for this reason I have ventured to bring it forward and commend it to the attention of the members of our Association) that if we comply with the law and act accordingly, we may expect and obtain justice and protection under the special clauses of the Act of 1890, if we act with "good faith and reasonable care."

The Members dined together after the meeting at the Café Royal.

SCOTTISH DIVISION.

A meeting of the Scottish Division of this Association was held in the Hall of the Faculty of Physicians and Surgeons, Glasgow, on 11th March. Present: Dr. Margaret Dewar, Dr. Carswell, Dr. Clouston, Dr. Farquharson, Dr. France, Dr. Hotchkiss, Dr. Ireland, Dr. MacPherson, Dr. Marr, Dr. Middlemass, Dr. Mitchell, Dr. Oswald, Dr. Alexander Robertson, Dr. Skeen, Dr. Turnbull (Secretary), Dr. Urquhart, Dr. Watson, and Dr. Yellowlees.—On the motion of Dr. Turnbull, Dr. Ireland took the chair.

The minutes of last meeting were read and approved of.

Dr. Keith Campbell, Assistant Medical Officer, Murray Royal Asylum, Perth; Dr. Robert Brown Campbell, Assistant Medical Officer, District Asylum, Inverness; and Dr. T. Alf. Beadle, Assistant Medical Officer, Lanark District Asylum, Hartwood, were admitted as members of the Association.

MEMBER OF COUNCIL AND DIVISIONAL SECRETARY.

Dr. TURNBULL said that Dr. Yellowlees retired from the Council by virtue of the period during which he had held office, and was not eligible for re-election. He moved that Dr. Watson, of Hawkhead Asylum, should be suggested for nomination as a member of the Council.—The motion was seconded by Dr. CLOUSTON, and unanimously agreed to.

Dr. URQUHART moved that Dr. Turnbull be again nominated as Divisional Secretary.—This was seconded by Dr. YELLOWLEES, and unanimously adopted.

CONJOINT RESEARCH PATHOLOGIST FOR SCOTTISH ASYLUMS.

Dr. CLOUSTON, convener of the Committee of the Medical Superintendents of Scottish Asylums in regard to the scheme for the appointment of a Conjoint Research Pathologist, in submitting the first report of that Committee, said that this was not part of the business of this Association, but he thought that the meeting would be glad to hear what had been done in this important matter, for the Committee would be glad to hear any suggestions that might be made in regard to it. First, the Committee drew up a statement with regard to the pathological study of insanity. They all knew that to propose to a member of a provincial asylum Board that he should devote part of the rates of his county to research might be greatly misunderstood unless an explanation was offered as to the results of such research, and this the Committee endeavoured to meet by circulating the statement. They believed that this statement had been the means of enlightening persons who had absolutely no other means of knowledge except through the doctors of the asylums. This statement followed them to their homes. As everyone there knew, the College of Physicians had set up a splendid laboratory in Edinburgh, and they had a certain amount of accommodation not at present utilised by the workers in that laboratory. The Committee were engaged in negotiations to secure a place within the building of the College, and they thought that they could be accommodated there on reasonable conditions. The feeling of the Council of the College seemed to be that they should not form an integral part of the laboratory, for there might be some objection to have a man paid by the ratepayers, an *imperium in imperio*, as part of the laboratory. It seemed likely that they would have two rooms assigned to them for a laboratory, that these rooms would be fitted up by the College, and that they should pay some rent. Under the general control in regard to certain specified matters by the Superintendent, their pathologist would hold an independent position, and so friction would be avoided, and they would carry out the scheme in their own way. The matter was not yet decided by the College of Physicians in Edinburgh, who, of course, had the key of the situation in their hands. He was glad to say that they might undoubtedly congratulate themselves in that they had secured a sum of £505 a year* for this purpose, and in most instances secured it for five years. There was some legal difficulty about the district asylums guaranteeing it for that time, but they thought that the scheme, if once started, would go on, and the idea was that it should be at present experi-

* This is now nearly £800 a year.—[Ed.]

mental. They would carry it out on the support already promised; but there were several Institutions whose Boards had not yet made up their minds on the subject. They had communicated with those who could give them information, and they had written to all the Superintendents of the London County Council, and had their replies. There was a suggestion from Sir Windham Austruther to Dr. Skeen, in which he proposed that on the Board which would have the appointment of the pathologist and control of the laboratory, they should have not only the asylum medical staff represented, but that the lay Boards of the asylums should be represented. The Committee would be most anxious to secure the aid of the Asylum Boards, but that their representatives should actually be on this Pathological Board, which was professional and medical in its whole character, did not commend itself to their ideas. Now they had to make out a detailed scheme for the particular duties, and the mode in which it was to be worked. When the Committee had the whole scheme prepared, they would circulate it amongst the members. In the meantime he was authorised to suggest that the Medical Superintendent of every contributing asylum should be added to the General Committee; and then they could appoint a sub-committee to look after the details.

The CHAIRMAN said they were very much obliged to Dr. Clouston for maturing this scheme, which he thought did him very great honour, and after some discussion the subject was dropped.

MIDLOTHIAN DISTRICT ASYLUM PLANS.

The CHAIRMAN explained that Dr. Mitchell had not yet been able to obtain the plans of an addition which is to be made to the Midlothian District Asylum, and consequently they could not be shown that day.

THE USE OF THYROID PREPARATIONS.

Dr. HAMILTON C. MARR read a carefully prepared paper on "The Use of Thyroid Preparations in certain cases of Insanity," which will be tabulated for this number of the Journal.

The CHAIRMAN thanked Dr. Marr for his contribution on this question, which at present interested them more than anything else. He was glad to see that the hopes of this remedy which had been held out had not been gainsaid. Perhaps they had not been realised so much as they expected, but there seemed to be little doubt that in that agent they had a very powerful aid to their *Materia Medica*. He noticed that Dr. Marr had mentioned immediate effects of thyroid, and he believed that had been noticed by a considerable number of observers. It was difficult to account for it by showing that good results were owing to change of structure.

Dr. YELLOWLEES said that a paper of that class was very valuable. It showed an immense amount of industry, which they appreciated very much indeed. Dr. Marr attributed recovery in 20 out of 100 cases to thyroid; but he was bound to say that his experience of thyroid had been disappointing. He had again and again got temporary benefit, but he had not seen in his own cases any recovery which he could credit entirely to thyroid. His feeling was that it was uncertain. He had seen it followed by disturbed heart action; but in spite of this he thought it would be wrong to omit trying it in any suitable case. He had certainly seen perfectly marvellous recoveries.

Dr. CLOUSTON said he had no doubt that thyroid in itself was a direct stimulant. He would take the last case in which he had been using it—a case of a lady who suffered from folie circulaire, and continued in a depressed condition. After two days' administration the temperature rose to 99 degrees, the depression vanished, she told him that she now felt well and she slept normally for the first time for a long period. Her skin was constantly covered with perspiration, and her bowels, which had been sluggish, suddenly resumed their normal action. After four days he stopped the drug, and the result was that she fell back into the previous condition. It had proved a stimulus to the mind, to the skin, the bowels, and the appetite, but that effect was not permanent. He thought most of them had seen a sufficient number of remarkable cases to make them continue the use of the drug without hesitancy in spite of failures. It had certain disadvan-

tages, and they had better realise them. It greatly depressed the heart's action and increased the pulse rate. It depressed the general vascular tone, and he thought they at Morningside had come to the conclusion that good results were nearly always seen in young people, and bad or negative effects in the old. He did not think that there was any use of giving thyroid after 60 years of age. The melancholiacs, whose appetites were paralysed and who refused food, were difficult cases. Some such cases on a course of thyroid recovered appetite and began to lay on flesh; but there were other cases of melancholiacs where it irritated the system and produced a tendency to vomit. In one such case he was not quite sure whether they had not lost their patient in consequence. It was the last resort as the patient was going down hill. Again, did thyroid ever do good unless fever was produced? Was there any use of giving it in five-grain doses, or should they produce a short smart fever, and, if so, how long should it continue? Possibly Dr. Marr was right, and possibly they were wrong, but he thought that Dr. Bruce, who had originally suggested this treatment, had shown at Morningside that it should not be continued for longer periods than 10 days, and in some cases only five or six. Was there any advantage in giving it for prolonged periods? Some patients might take any amount of thyroid without thermal disturbance, others had fever after 15 grains. The reason of that he was totally unable to explain. They required to be most careful in giving thyroid if there was any tubercle in the body. It livened up tubercles. He had no doubt about that. He believed it might be useful in neurasthenia. He had the greatest difficulty in getting his friends in Edinburgh to try it in a vigorous manner. If they used it they might overcome the tendency to thinness in certain cases of neurasthenia. In some cases they seemed to have got an extraordinary result by giving ovarian extract. In a case of persistent and very bad insanity of two years' duration in a woman of twenty-eight, who had undergone ovariectomy, and who seemed to become insane afterwards, in a few weeks, certainly within a month, after getting ovarian extract her mental symptoms had stopped. Meantime she was now better than she had been for the last two years.

Dr. ALEXANDER ROBERTSON had no doubt that by the action of thyroid there was a very marked metabolism as proved by the usual loss of weight of all the tissues and the very rapid change. Under the use of thyroid perhaps the absorption of products or half formed products of low vitality in the cells of the cortex took place. These products were removed for the time being at all events. Afterwards, unfortunately, when the stimulation of the thyroid was removed, the patient too frequently fell back mentally. The general impression left on his mind was that thyroid was a very valuable remedy, and that cases of stuporose insanity threatening to become chronic should be treated with it. There were other remedies which might be of use in a similar way. He had been using cerebrin and myovine, and found these good stimulants. The class of cases in which they were useful was somewhat different from the cases where thyroid proved efficient. He thought cerebrin particularly serviceable in mild cases of mental disorder that did not land in an asylum at all. The last case in which he used it was the wife of a medical man, still under his care. The husband told him that he found it too stimulating, and was obliged to give it up. It did not disturb the system in any way. When one thought of the marked changes of nutrition that took place he could hardly doubt that there was some direct effect on the nerve system, for these were the parts that seemed to be particularly stimulated. The waste of tissue was far beyond what any fever could produce.

Dr. FARQUHARSON said that at the Cumberland Asylum last year they tried thyroid extract in a number of cases, giving it for a short time in large doses. In some cases the temporary effects were very marked, but in no single case was there permanent improvement. One or two patients relapsed very quickly after the drug was stopped. One or two were worse after the administration of the drug than before it, and the whole of their experience of thyroid was most disappointing.

Dr. OSWALD said in the treatment of myxœdema he believed that raising of

temperature was the universal result of thyroid administration, and he would ask was there always a rise of temperature in cases of treatment of insanity by thyroid? And if not, were the cases in which the rise did not take place those in which it did not have a good effect? In many cases of insanity they had seen good results resulting from a febrile condition which did not follow upon the giving of thyroid extract. Dr. Marr referred to a case where an attack of erysipelas intervened with a very marked improvement in the mental condition. Was that due to an increase of pulse action? He was inclined to think it due to a cleansing of the brain, which left it healthier than before. In the treatment of insanity by thyroid extract, did the thyroid have a direct influence on the brain, or was it a secondary action, or was it an effect on the brain through the circulation?

Dr. CLOUSTON said that his opinion had first been that the good effect was simply a result of febrile action, but he had altered his opinion, and now thought that the action was twofold, one febrile (because they never got good effects without the fever) and the other by direct stimulation of the nerve centres.

The CHAIRMAN said that when he first heard of the thyroid extract he was a little frightened about the danger of an overdose. One well-known member of the profession said it was a poison, and had lost one case. He himself had tried it, but must have met with patients who were insusceptible to its action. On one occasion a butcher sent him a mass of thyroid as big as his fist, and his cat ate up the whole lot, but the animal was none the worse. He noticed that some of the physicians who had used this treatment said that they administered it for ten days only, but that was different from Dr. John Thomson, who had got wonderfully good effects in children with nothing but the remains of a few milk teeth, who, under thyroid, began to develop teeth and grew two or three inches. Perhaps the mental changes were not so complete, but there was considerable improvement in the intelligence.

Dr. HORTCHKISS referred to the value of recovery under thyroid treatment. Whether the patients would remain well as long after they had been cured by thyroid as if they had recovered by the ordinary methods had not been settled yet, for the reason that this treatment had only recently been tried. It would require many years, and not only time, but also observations, which they could not always obtain after patients left the asylum, because, as a rule, they lost sight of them.

Dr. URQUHART said he was not very much concerned about the theory, but he was really very urgent that gentlemen who had tried this treatment should put their cases on record whether they had been successful or not. They required to know about the patients who did not recover, because they had yet to arrive at some conclusion in regard to the therapeutic question. Dr. Clouston had told them that it was of very little use after the age of 60, and that it was a danger to tubercular patients. These were the sort of facts that should be put on record as early as possible. He doubted if at this time of day it was of sufficient importance to go into the details of each case, but rather would tabulate them in such a manner that they could be easily referred to. He hoped that would meet with a favourable response, so that they would know more about the cases where thyroid had failed. For himself he had had one case where it had been entirely successful, and one successful case covered a multitude of failures. If they could secure one recovery of a person who otherwise would have been a chronic lunatic that encouraged them to persevere. The danger seemed to be the strain on the heart; unless they produced that action the drug seemed to have no effect, and he attributed that to the position of affairs in the economy of the person. If the thyroid gland were acting well he fancied that there would be no use in giving the drug, but if the gland were in abeyance, and if they could introduce it into the system, it might be extremely useful, for it apparently supplied something that was necessary for physiological action. The only indubitably successful case that he had recorded went away

entirely recovered, after being for long in a state of stupor following on mania. He conceived that it was his duty to tell the patient that in order to keep well she should occasionally take a tabloid of thyroid, because he did not think there could be any possible harm in taking the precaution to keep in touch with this active principle.

Dr. TURNBULL said that in the cases in which he had used it he could not say that they found it very satisfactory. In one typical case it lightened up the patient and made her talk for a time, but it was morbid excitement, and when the thyroid was stopped she dropped back into her former condition. In another case the result was very successful; but here there were distinct bodily indications of myxœdema, while mentally there were distinct delusional symptoms, not the hebetude which is usually found in the myxœdematous condition. Under thyroid treatment she improved distinctly in bodily health, and at the same time she improved gradually in mind so far that she was ultimately discharged recovered. That was the most striking instance he had had of benefit from thyroid. In a case of imbecility, where the dry skin and other features were suggestive of a myxœdematous condition, they could not say that they secured any good results under thyroid treatment.

Dr. MARR, in reply, said that in regard to the Chairman's remarks about the increase of corpuscles of the blood, he might state that he had examined some half a dozen cases, and these cases were anæmic. Whether the thyroid had an effect on the hæmoglobin he was not prepared to state. Dr. Victor Horsley thought that it had such an effect, but he was more inclined to regard the improvement in regard to these elements as secondary, and indirectly due to the increase from better bodily condition. With regard to Dr. Yellowlees' remarks, about 20 cases out of 100 having recovered, it certainly was a very large number, because at first they had selected the cases. He was working amongst myxœdema cases, and they tried it in cases of insanity showing myxœdema, and the number of recoveries was thus large. He had found the results of thyroid sometimes disappointing. He was somewhat disappointed with the use at first, but after continuing with it for lengthened periods he noticed in some cases that the results were better. With regard to Dr. Clouston's remarks that the use of thyroid in certain cases increases the appetite, he found that to be the case in some instances. There must be small doses, perhaps a quarter of a tabloid or half a tabloid. Three tabloids caused an increase in the weight of the body, and did not improve the appetite. As to the varying effect of thyroid, he was much struck with this in two cases he had treated. The one was a case of melancholia, and the other a case of stupor, and the difference in the physical symptoms was most marked. One case had dry hair; in the other the hair was oily and moist. In the one case thyroid did good, and in the other case it did harm, and he had to stop the use of it. With regard to the use of thyroid in producing febrile reaction he had not had so much experience of the method, but he was inclined to think that the value here from the use of thyroid was not in producing fever, because fever in many cases did not produce recovery. He had seen a case where it had produced recovery, but he was inclined to attribute the results he had obtained to the beneficial action of the thyroid in the nutritive fluid circulating through the body. He did not go into the nature, or what was presently thought to be the nature, of this change in the nutritive fluid. With regard to Dr. Farquharson's statement that he had not found any prominent improvement, his experience was that if he had taken longer time and smaller doses he might have had more success. He was inclined to think that the effect of thyroid was not direct, but indirect. In most of the cases by adding the thyroid they improved the conditions of nutrition, and so improved the nervous system.

NORTHERN AND MIDLAND DIVISION.

A preliminary meeting of this Division was held in the Library of the Medical School, Leopold Street, Sheffield, on March 18th, 1897. Present: Dr. Smith-Kay, Dr. Mould, Dr. Hitchcock, Dr. Holmes, Dr. Adair, and Dr. Crochley Clapham (Secretary).

Dr. Smith-Kay was voted to the chair,

The SECRETARY read correspondence relating to the formation of the Division, including a letter from the General Secretary, containing the following resolution of the Council:—"That the application contained in Dr. Crochley Clapham's letter for the formation of a Northern and Midland Division of the Association in England be complied with;" and, further: "That Dr. Crochley Clapham be appointed Divisional Secretary *pro tem.*"

It was proposed by Dr. MOULD, and seconded by Dr. HOLMES: "That the next meeting of the Division be held in Manchester (Cheadle), on Wednesday, June 16th, 1897."—Carried.

Proposed by Dr. HOLMES, seconded by Dr. ADAIR: "That some distinguished medical man be invited to give an address at the Manchester meeting, and that arrangements for securing same be left to Dr. Mould and the Secretary."

A vote of thanks was passed to the Medical School and the Sheffield Medical-Chirurg. Society for the use of the room for meeting. Also a vote of thanks to Dr. Kay for presiding.

SOUTH EASTERN DIVISION.

The inaugural meeting of the South Eastern Division was held on the 21st April, at the London County Asylum, Cane Hill. The following members were present:—Drs. Wm. Julius Mickle (President), J. M. Moody, H. Rayner, D. Nicolson, R. R. Alexander, W. J. Seward, H. Gardiner Hill, F. W. Mott, T. Outterson Wood, Fletcher Beach, E. W. White (Hon. Sec. *pro tem.*), D. G. Thomson, G. Stanley Elliot, H. H. Kidd, D. Bower, S. Rees Philipps, W. Ireland, Donaldson, A. N. Boycott, T. Seymour Tuke, James Adam, H. Corner, G. Stevens Pope, J. G. Gordon-Munn, P. Campbell, L. Rolleston, G. E. Shuttleworth, H. J. Macevoy, G. E. Mould, W. J. H. Haslett, R. H. Cole, W. Lloyd Andriezen, and Drs. E. Fricker, E. P. Furter, H. G. Cribb, R. H. Mornement, and R. W. Wilson (visitors).

From 12 noon to 1 p.m., and again from 2 to 3 p.m., Drs. Boycott and Donaldson conducted detachments of members around the wards, grounds, and administrative departments of the asylum. In several wards demonstrations of interesting cases were given. At the same time Dr. Mott, F.R.S., showed macroscopical and microscopical pathological specimens of brain disease in the Recreation Hall to other members, and Dr. Donaldson exhibited photographs of typical forms of insanity. From 1 to 2.30 p.m. Dr. Moody entertained the members at an excellently-arranged luncheon in the billiard-room. At 3 p.m. the chair was taken by Dr. Mickle (President), at the business meeting, which was held in the Recreation Hall.

The CHAIRMAN called upon the Honorary Secretary (*pro tem.*) to read a letter authorising the formation of the Division.

The HONORARY SECRETARY read the letter and Article 30 of the Memorandum of Association.

Bethlem Hospital, Feb. 23rd, 1897.

Dear Dr. White,—It is hardly necessary for me to officially inform you that the Council agreed to the formation of a South Eastern Division, and that you were appointed Divisional Secretary *pro tem.*, but I was directed by the Council to specially call the attention of Divisional Secretaries to Article 30, and so I write. No doubt the boundaries will be settled by the next Council meeting.

Believe me, yours faithfully,

R. PERCY SMITH.

Dr E. White, Stone, Kent.

NEW MEMBERS.

The following candidates for election as ordinary members of the Association were declared duly elected:—

Harry Gifford Cribb, M.B.C.S., L.R.C.P., Assistant Medical Officer, London County Asylum, Cane Hill. Proposed by Drs. Moody, Boycott, and Donaldson. Robert Harry Mornement, M.R.C.S., L.R.C.P., Assistant Medical Officer, London County Asylum, Cane Hill. Proposed by Drs. Moody, Boycott, and Donaldson. Frederick Ryott Percival Taylor, M.D., B.S.Lond., M.B.C.S., L.R.C.P., Assistant Medical Officer, London County Asylum, Claybury. Proposed by Drs. Robert Jones, Savage, and Rayner. Emily Lousia Dove, M.B. Lond., Assistant Medical Officer, London County Asylum, Claybury. Proposed by Drs. Robert Jones, Savage, and Rayner. Margaret Orange, L.S.A., M.D. Brux., Assistant Medical Officer, London County Asylum, Claybury. Proposed by Drs. Robert Jones, Savage, and Rayner. Joseph John Guthrie Blandford, B.A., D.P.H.Cantab., M.R.C.S., L.R.C.P., Assistant Medical Officer, London County Asylum, Banstead. Proposed by Drs. T. C. Shaw, C. H. Bond, and E. W. White. Herbert Nelson Cappe, M.R.C.S., L.R.C.P., Assistant Medical Officer, Surrey County Asylum, Brookwood. Proposed by Drs. J. E. Barton, Gayton and E. W. White. William Edward Jones, L.R.C.S., L.R.C.P.Ed., Assistant Medical Officer, Earlswood Asylum. Proposed by Drs. Caldecott, E. W. White, and F. Beach. Hugh Kerr, M.A., M.B., C.M., Assistant Medical Officer, Bucks County Asylum. Proposed by Mr. Humphry, and Drs. E. W. White and T. O. Wood.

ELECTION OF DIVISIONAL SECRETARY.

Dr. RAYNER said he had very great pleasure in proposing Dr. White as Secretary, adding that he (Dr. White) had worked for years in the interests of the Association, and would always continue to do so.

Dr. NICOLSON seconded, stating that the Committee would have considerable difficulty in finding one more capable to fill the position.

Upon the motion being put to the meeting it was adopted unanimously.

Dr. WHITE thanked the members for electing him, and said he would endeavour to do his best, and if he failed in any respect he would be glad if the matter were brought to his notice.

COMMITTEE OF MANAGEMENT.

The CHAIRMAN said the next business was to elect a Divisional Committee of Management. He went on to say that the S.E. Division was a most important one, as it embraced 158 members, or one-third of the voting power of the Association. This Committee was to consist of nine members, and the Honorary Secretary, that number being one half of the number on the Association Council. For the first three years, three members would retire annually, the vacancies being created by ballot, then members would retire by tenure of office. It was proposed that the Committee should consist of five Medical Superintendents (present and past) in the South and East of England, a representative from the Hospitals for the Insane, two representatives from Private Asylums and one Assistant Medical Officer.

Dr. NICOLSON suggested that another Assistant Medical Officer should be put on the list.

The CHAIRMAN submitted the names of members whom it was proposed to place on the Committee, viz.: Drs. Swain, Moody, Seward, Thomson, Bower, Alex. Newington, Rayner and Turner, and Mr. Bayley.

A MEMBER said he had no wish to increase the number of the Committee, but he would like to see the Assistant Medical Officers better represented.

Dr. BOWER suggested the name of Dr. Boycott in place of his own.

Dr. SEWARD suggested that his name should be removed from the Committee.

Dr. RAYNER suggested that if anyone should be sacrificed it should be he. At the same time he considered it an honour to serve on the Committee, and only withdrew his name because he felt assured that an Assistant Medical Officer was a more suitable candidate for the position.

The CHAIRMAN said he would test the question by asking those who were in favour of the Committee being composed of five Medical Superintendents of County Asylums, two Superintendents of Private Asylums, one Hospital man, and one Assistant Medical Officer, to signify their approval by holding up their hand. No hands were shown. An amendment, that two Assistant Medical Officers should serve on the Committee was then put to the meeting and carried unanimously.

It was proposed by Dr. BOWER, and seconded by Dr. THOMSON, that Dr. Boycott's name be added to the list of the Committee.

The CHAIRMAN said Dr. Bower had no right to withdraw his name, he being a representative of the Private Asylums.

Dr. ANDRIEZEN asked the Chairman whether it was a hard and fast rule of the Council that the Committee should be a multiple of three.

The CHAIRMAN replied that if the Committee consisted of a multiple of three, it was possible to have a complete change of members every three years, by an equal number retiring every year.

The SECRETARY announced that Dr. Seward had waived his claim to serve on the Committee.

The CHAIRMAN then accepted Dr. Seward's resignation, and after some discussion, it was proposed by Dr. NICOLSON and seconded by Dr. BEACH that the Divisional Committee of Management consist of Drs. Swain, Moody, Thomson, Alexander Newington, Rayner, Bower, Turner, Boycott, and Mr. Bayley, with the Honorary Divisional Secretary.—Carried unanimously.

MEMBERS OF COUNCIL.

The Committee then proceeded to select two suitable names to submit to the Council for nomination to fill vacancies at the next annual meeting, should there be two vacancies for the Division.

Dr. BEACH proposed the name of Dr. Moody.

Dr. ADAM seconded.

Dr. T. O. WOOD proposed the name of Mr. Bayley.

Dr. BOWER seconded.

The CHAIRMAN then moved that the names of Dr. Moody and Mr. Bayley be submitted to the next annual meeting of the Council to fill the vacancies thereat, should such vacancies exist.—Carried unanimously.

NEXT MEETING.

The SECRETARY read a letter from Mr. Bayley stating he would be glad to receive the Division on the 13th or 20th October next, at St. Andrew's Hospital, Northampton.

It was proposed and seconded that Mr. Bayley's invitation be accepted for the 13th October, provided this date did not clash with any General Meeting.—Carried unanimously.

Dr. WHITE then said,

Mr. President and Gentlemen,—We, members of the Medico-Psychological Association, resident in the South and East of England, to-day take a new departure. Prompted by the same principles which guided the original founders and early pioneers of our Association, we meet to form a South-Eastern Division. Those principles were, the advocacy of co-operation on the part of medical men engaged in the practice of psychological medicine, the discussion of the results of individual experience, the improvement in the moral and medicinal treatment of the insane, and the better knowledge of each other. Owing to the gratifying extension of our roll of membership (we now muster upwards of 500) decentralisation has become necessary to preserve our ancient tenets. It is a time-honoured principle with us that we shall periodically meet at Institutions for the Insane (Public and Private) in order that we may be brought into direct touch with the work that we are individually carrying out for ameliorating the surroundings, and advancing the treatment, of those committed to our care. At the present time two of the four General Meetings of the Association are held at our Headquarters in London, and necessarily so, because of the large amount of administrative work

which devolves upon the Council and its various Committees; a third is the Annual Meeting held in England, Scotland, or Ireland, and the fourth the quarterly gathering usually summoned for some provincial asylum or town near it. Now, it has occurred to certain of us that more should be done to encourage the junior members, and develop the young blood of our Association. As many of these are unable to be absent from their asylums at the same time as their Superintendents, this can only be effected by divisional work; and actuated by a desire to compass this end, we have taken steps to form this South-Eastern Division. More than two years ago the initial action was contemplated, but in order to ensure success, we preferred that the Division should come into being by a gradual process of evolution, rather than that we should run any risk of failure by too precipitate action. In January last it was decided to get to work, and as a preliminary step a letter was sent to the Medical Superintendents of the asylums of the counties which should form this Division to invite their support. The replies received were most encouraging to the movement, in fact they were almost unanimously in favour of it. In consequence a second letter was indited to every member of the Association resident in the Southern and Eastern counties (158 in all). Seventy-four replies in the affirmative, with signatures affixed to the petition, came back. These included those of the President, Ex-President, Treasurer, General Secretary, a Lord Chancellor's Visitor, a Commissioner in Lunacy, and 34 past and present Medical Superintendents of County and Borough Asylums and Public Hospitals for the Insane. These signatures are before you to-day. In response to this petition, presented at the last Quarterly General Meeting of the Association at Nottingham, the Council acceded to our request in the terms of the letter read to-day, and asked me to undertake the duties of Honorary Divisional Secretary (*pro tem.*). To-day's meeting is the outcome of this appointment. Now, our meetings should be held twice a year, in spring and autumn, for winter is not a suitable season in which to visit an asylum at a distance, and in midsummer our annual gathering attracts us. They must, moreover, be held at Institutions for the Care and Treatment of the Insane, in order that we may criticise in a friendly way each other's work, and develop thereby the general principles of scientific treatment and institutional management which we have at heart.

Last year a Collective Investigation Committee was appointed at the Annual Meeting. Now, I maintain, if anything can help the work of this Committee, it is the formation and active co-operation of Divisions of the Association. This was one of the objects of our founders, which has unfortunately been lost sight of, but which will be redeveloped by the decentralisation of the Association's work. Surely if any scientific body can obtain valuable results by collective investigation, we can! We are a world of our own! and our statistics should be all the more valuable because of our isolation. This is a field of labour which demands our closest attention; by developing it much can be done to advance rational treatment, and more, if State assisted, to prevent mental disease in the future.

So valuable is our time to-day, that I feel I must not detain you a moment longer than is necessary. Let us do our utmost to induce our junior members to read papers and take part in the discussions of these Divisional meetings. This province is theirs! and here they should feel that if any have precedence they have. The senior members will give the game the start; the junior must keep the ball a rolling. Let it be understood that belonging to the Division entails no additional subscription. The Council recognised the prospective value of these Divisions and undertook to bear the legitimate expenditure, believing, of course, that their development would bring additional members and kudos. Now, the counties which it is suggested should be included in the South-Eastern Division are London, Middlesex, Kent, Surrey, Sussex, Beds, Herts, Hants, Bucks, Northamptonshire, Cambridgeshire, Norfolk, Suffolk, and Essex. The other two Divisions of England are the Northern and Midland and the South-Western. The boundary line separating these two Divisions at the present time is drawn between North and South Wales, Salop and Worcester, Warwickshire and Gloucestershire. Oxford, Berks, Hants, and the Isle of Wight, which form a

fair province, are claimed by the South-Western Division. Why? I know not! for Berks comes within 16 miles of London; Hants is almost as near, and Oxford lies between Northampton and Berks. Surely this province is ours! This will be a matter for your Divisional Committee to discuss at an early date, in order that a claim may be presented to the Sub-Committee of the Council appointed at its last meeting to define and fix the boundaries of the three English Divisions. The Northern and Midland Division appears to me too large. Surely North Wales and Shropshire should be handed over by it to the South-Western Division. At present the members in disputed counties are doubly blessed, for they receive invitations to the gatherings both in the South-East and South-West. Gentlemen, may to-day be an auspicious one in the history of our Association! May our barque "the South-Eastern Division," which we to-day launch on the sea of Progress, safely sail o'er calm and troubled waters, seeking our El Dorado, as did the voyagers of old! And may we be attracted, as they were, by "the unknown" for the benefit of suffering humanity and the advancement of our art!

The PRESIDENT said that Dr. White had done what few orators do, combined eloquence, wit, and brevity. He had touched upon the question as to what Division the Counties of Berks, Hants, and Oxford rightly belonged. The members would best see the respective claims of the S.E. and S.W. Divisions by consulting the two maps before them. This was a matter this meeting could not decide, but if any member had any suggestion to make, they would be glad to hear him.

A MEMBER asked if this Committee could pass a resolution upon the question.

Dr. WHITE (Hon. Sec.) replied that it could express an opinion. It was proposed that the three counties in dispute be included in the S.E. Division.

The PRESIDENT suggested it would be better if the Committee forwarded a resolution stating that it is expedient that the three counties be included in the S.E. Division.

In reply to Dr. Philipps, the PRESIDENT said that the matter was at present under consideration by a Committee of the Council.

It was moved by Dr. BEACH, and seconded by Dr. T. OUTTERSON WOOD, that it is expedient that the three counties of Oxford, Berks, and Hants should belong to the South Eastern Division.—This was carried *nem. con.*

Dr. MOTT then gave an address upon "Some cases of Syphilitic Brain Disease resembling General Paralysis" (with lantern demonstration). Dr. Mott showed microscopical and macroscopical specimens of generalised syphilitic arteritis. He also gave a short account, with lantern demonstration, of some cases of syphilitic brain disease which presented clinical features that simulated general paralysis. He pointed out that cases of multiple gummata were often mistaken for general paralysis, and referred to three cases that had come under his observation. A number of cases, of generalised syphilitic arteritis, presented in the early stages curious transient phenomena indicating disturbance of the circulation in the hemispheres, *e.g.*, mental confusion, vertigo, fainting fits, aphasia, word blindness and deafness and all forms of monoplegias and hemiplegias, the nature of the defect depending upon the portion of brain temporarily deprived of circulation. The symptoms may last a few minutes, a few hours or a few days, and as Heubner pointed out they do not occur unless two large adjacent branches of the circle of Willis are obstructed by the endarteritis. Dr. Mott referred to the experiment of Dr. Leonard Hill upon ligation of the vessels supplying the brain in dogs and the temporary paralytic and psychical effects produced, which effects rapidly pass off when collateral circulation is established. Should collateral circulation be not established permanent paralysis sets in, accompanied often by dementia. He considered that iodide of potassium and mercury were beneficial rather in prevention of extension of the endarteritis than by its effects on already established disease. A number of such cases had come under his notice both at Charing Cross Hospital and in the asylum. As a rule the temporary phenomena are overlooked and it is only

when there is a permanent destruction of cerebral substance that the patient seeks treatment.

A full account of these cases Dr. Mott purposes to publish shortly in the Archives of the Pathological Laboratory of the London County Asylum.

Dr. NICOLSON congratulated the South Eastern Division on possessing the services of such a man as Dr. Mott, and said that members were especially fortunate in being able to listen to such an interesting subject, presented in so clear, concise, practical and suggestive a manner. He thanked Dr. Mott for opening up the work of the Division.

The PRESIDENT said the question of general paralysis and syphilis was very interesting, but unfortunately they had no time for discussion. He gave particulars of a case in July, 1896. Personally, he found no difficulty in saying whether a case was one of syphilis or general paralysis. There are very few cases that own one single cause—causes are very complex. The returns as to causes are not worth the paper they are printed upon, they are frequently based upon statements of Relieving Officers.

Dr. MOTT said he was only too glad to give his experience to the Division, also that he agreed with Dr. Mickle, that brain disease is caused by several factors, but he hoped at an early date to prove more conclusively the statements he had made that afternoon.

The other papers on the agenda were not read for want of time.

In the evening 21 members dined together at the Café Monaco, Piccadilly Circus, W., amongst them being Drs. Chambers, H. G. Blandford, Bond, Alliott and Rawes, who were unable to attend the meeting at Cane Hill.

SOUTH-WESTERN DIVISION.

The Spring Meeting of the Members of this Division was held at Barnwood House, near Gloucester, on April 27th. There were present Drs. Maury Deas, Benham, J. Greig, Soutar, Henley, Townsend, Morrison, Hanbury, Aldridge, McByran, Bullen, Blachford, Iles, Eager, MacDonald, *Hon. Sec.*, Percy Smith, A. L. Newington, and five visitors.

On the proposition of Dr. BENHAM, seconded by Dr. SOUTAR, Dr. Deas was voted to the chair.

Dr. MACDONALD (*hon. secretary*) read the minutes of the last meeting, which were confirmed.

The following candidates for membership were unanimously elected:—William Arthur McCutchan, L.R.C.P. and S. Edin., Assistant Medical Officer, County and City Asylum, Hereford. Proposers: Dr. Morrison, Dr. MacDonald, Dr. Hanbury. Ernest D. Warren, L.R.C.P. and M.R.C.S., Assistant Medical Officer, City Asylum, Digbys, Exeter. Proposers: Dr. Rutherford, Dr. MacDonald, Dr. Davidson. William R. Thurnam, M.B. and B.S., Assistant Medical Officer, City and County Asylum, Bristol. Proposers: Dr. Benham, Dr. MacDonald, Dr. Blachford. Thomas S. Good, M.R.C.S. and L.R.C.P., Assistant Medical Officer, County Asylum, Littlemore, Oxford. Proposers: Dr. Sankey, Dr. MacDonald, Dr. Davidson.

RE-ELECTION OF THE HON. SECRETARY.

Dr. SOUTAR said he had great pleasure in proposing the re-election of Dr. MacDonald as *hon. secretary* for the division.

Dr. BENHAM seconded, and testified to the time, attention, and enthusiasm that Dr. MacDonald put into the duties.

The CHAIRMAN said he put the motion with great pleasure, as he knew it would be carried unanimously, which was done by the meeting.

Dr. MACDONALD returned thanks. The duties involved a certain amount of labour, but he was quite willing to carry them on at any rate for another year.

THE ELECTION OF A COMMITTEE OF MANAGEMENT FOR THE DIVISION.

After considerable discussion it was proposed by Dr. MORRISON, and seconded by Dr. BENHAM, "That a Committee of Management, consisting of six members, together with the Hon. Sec., be appointed to conduct the business of the Division."

This was carried unanimously.

The HON. SECRETARY proposed, and Dr. MORRISON seconded, that Drs. Deas, Weatherly, Wade, Benham, Soutar, and Morton form the Committee of Management, and the same were unanimously chosen.

On the proposition of Dr. BENHAM, seconded by Dr. SOUTAR, it was unanimously resolved to submit Dr. Deas's name for the consideration of the Council when filling up the vacancies on the Council.

PLACE OF NEXT MEETING.

Dr. MACDONALD reported that Dr. Bonville Fox had written inviting the members to visit him at Brislington House, near Bristol, at some suitable date in October next. This was a very good centre, and he was sure Dr. Fox would be very pleased to see them. He moved that Dr. Fox's invitation be accepted and that the exact day be left open for the present.

The CHAIRMAN was pleased to second this, saying they would be sure to have a warm reception there.

The motion was carried unanimously.

The CHAIRMAN said that concluded the business unless any member had anything to bring forward.

PROPOSED PAT HOLOG IS

Dr. MACDONALD said that a member had written asking for his views on the question of having a special pathologist for this Division or District, and he had great pleasure in bringing the matter before the meeting. He could not help thinking that it was a step in the right direction, and though we might perhaps be borrowing a leaf from the noble example of the Scotch Asylums, he was anxious that the proposal should be considered, and he therefore begged to move "That the proposal to appoint a special pathologist for this District be referred to the Committee of Management for the South-Western Division."

Dr. BENHAM said he would like to second the proposition that this be referred to the Committee. One or two Superintendents, who were unfortunately not present to-day, had spoken to him and expressed a strong opinion that the Division ought to appoint a pathologist. He thought when the name of the gentleman who had been suggested for the appointment was mentioned it would meet with general acceptance. The great point was the pecuniary one. It was thought they might possibly get the use of some rooms at Bristol Hospital, and then it would be necessary to have a certain sum of money for instruments. He might say that he believed that a great number of Medical Officers had the inclination for pathological work, but they had not the necessary time to devote to it. By the appointment suggested they might get some scientific advancement in the Division.

Dr. MORRISON said the idea was novel, and he did not know whether they could appeal to the Technical Education Committees of County Councils for a grant towards it. He did not see why they could not do so, as some Councils had made grants towards ambulance work.

The CHAIRMAN—That would be a matter for the Committee to consider.

The meeting agreed to refer the whole question to the Committee of Management.

RECOVERIES IN ASYLUMS.

Dr. J. GREIG SOUTAR read a paper on "Recoveries in Asylums." (See Original Articles.)

The CHAIRMAN said that, as time pressed and Dr. Goodall was not present, they had better defer to the next meeting the reading of a paper by that gentleman on "The Systematic Collection of Anthropometrical data in Asylums." It was a

very important and interesting question and it would not be satisfactory to discuss it in Dr. Goodall's absence (hear, hear). He had now the very pleasant and agreeable duty of asking the meeting to accord a cordial vote of thanks to Dr. Soutar for the very kind and hospitable manner in which he had received them that day. All knew what a pleasure it was to come to Barnwood House and see so lovely a place. One envied Dr. Soutar many things they saw there, but the great thing he envied him was the grounds.

The motion was carried with acclamation.

Dr. SOUTAR suitably returned thanks, and said he and his colleague had had the greatest possible pleasure in receiving the visitors. It was a great advantage for the members of the Division to have opportunities of meeting from time to time at various asylums, there to hear suggestions, and also to have their places criticised. Commendation was the greatest snare a Superintendent could have, and good wholesome criticism was the best thing to make them keep pace with the times.

The members and several visitors afterwards dined at the "New Inn" Hotel and a most enjoyable evening was spent.

BATH AND BRISTOL BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Remarks upon Golf in the Treatment of Mental Disorders. By C. S. W. COBBOLD, M.D., F.R.C.P. Edin., etc.

The following is a short summary of a paper read before this Branch in April, 1897.

Golf is not destined to supplant the other amusements and occupations which have long been serviceable in the treatment of insanity, but it has a very definite usefulness in some cases, owing greatly to its acknowledged capacity for arousing a healthy enthusiasm in persons who are specially in need of some new and absorbing interest.

I. Golf as a Preventive of Serious Mental Disease.—There is no doubt that golf is of immense value in counteracting many of the harmful effects of the strain and competition of modern life. The rapidity with which golf clubs have sprung up around the most active and advancing business centres affords a strong presumption, that the capable business man of to-day finds in this game a healthy influence which is specially suited to his needs. Many do not hesitate to affirm that golf has saved them from mental breakdown. Golf probably acts as a preventive of insanity to a greater extent than can be estimated by any available facts or figures.

II. Golf as a Pastime for Chronic Insane Patients.—In this capacity the game has a very limited usefulness; patients are, as a rule, incapable of learning it sufficiently well to become interested in it; but exceptions are seen in some cases of chronic insanity with little or no dementia, especially in patients who have been skilful at ball-games before they became insane. Some patients who have been golfers while sane are also pleased to pass their time in playing feebly after they have become more or less demented. It must always be borne in mind that a golf-club skilfully wielded is a distinctly dangerous weapon, and that the game itself is peculiarly trying to the temper even of the sane.

III. Golf as a Curative Agent in Insanity.—It is during the later and convalescing stages of insanity that golf is sometimes invaluable; it often supplies just the new interest which is needed to complete a cure and may save a patient from drifting into partial dementia. It is often successful in arousing enthusiasm when old pursuits quite fail to do so. It is quite as useful for convalescing ladies as for men, and all its advantages may be obtained for beginners upon small garden or park links.

WOUNDS AND BRUISES IN THE INSANE.

In a paper read before the Abernethian Society on this subject, Dr. T. Claye Shaw comes to the following conclusions :—

A correct estimate of the cause and life-history of a bruise is important.

1. To protect the interests of the patient.
2. To check unfounded charges of assault made against an attendant.
3. To ensure as far as possible the removal of causes which may have produced injuries and bruises in the past.

In view of the mental state of the patient the silent voice of the bruise is often the only guide there is, and even that is often not of much help, as it is rare to be able to surmise even the instrument which inflicted the injury, from a survey of the bruise.

From an analysis of 111 cases the following statistics have been collected :—

1. *Oncoming*.—89 per cent. of the bruises were apparent by the next day, and none appeared after three days.
2. *Coloration* :—
 - α If bruise purple or red, injury inflicted within 4 days.
 - β If bruise yellowish red or greenish yellow, injury inflicted 4-5 days ago.
 - γ If bruise yellow, injury inflicted more than 4 days ago.
3. *Disappearance* :—
 - α The time varied from 4-39 days.
 - β 50 per cent. disappeared in 6-9 days.
 - γ The influence of age, position, and bodily health could not be traced.

Where injury is due to external violence we usually have a superficial bruise, but—

1. In insane persons there is often a morbid condition of tissue, and internal injury may be done with no external bruise, often with very little violence.
2. Pathological processes, *e.g.*, purpura, may simulate bruising, and lead to the erroneous conclusion of violence.
3. Even in serious injuries, *e.g.*, broken ribs, broken jaw, ruptured muscle, not only may there be no external bruise, but the subjective symptom of pain is often wanting, due to the “insensitive” condition of the patient.
4. Deep injuries, especially with much blood extravasation, may cause delayed bruising and discoloration, due to absorption by superficial vessels.

An interesting analogy is drawn between the spectrum of white light and the colour changes in a bruise. The beam of white light may be said to be “bruised” in its passage through the prism. If a small quantity of blood is increasingly dilated we have a play of colours not unlike the succession in the spectrum—through red, greenish, yellowish-green, yellow, and final disappearance in excessive dilution. The parallel in a bruise consists in the extravasation and colouring, degeneration and dilution by surrounding fluids, which goes on till the colour, at first red or purple, fades through the lighter shades of yellow and finally disappears.

**A SCHEME FOR THE REGISTRATION OF THE RESULTS OF THYROID TREAT-
JOINT COUNTIES**

No. of Case.	Sex.	Age.	Mental Disorder on Admission.	Duration and No. of Attack.	Causation.	Previous History, Personal and Family.	Mental Condition before Administration, and Prognosis.
1	F.	18	Mania.	11 mos. 5 days.	—	—	Stuporosa.
2	F.	35	Melancholia.	23 mos.	—	—	Depressed.
3	F.	27	Mania.	26 mos.	—	—	Excited and noisy.
4	F.	6)	Melancholia.	12 mos.	—	—	Depressed & irritable.
5	F.	26	Melancholia.	4 yrs. 11 mos.	—	—	Depressed.
6	F.	32	Melancholia.	8½ yrs.	—	—	Stuporosa.
7	F.	24	Mania.	6½ yrs.	—	—	Stuporosa.
8	F.	39	Mania.	9 yrs. 3 mos.	—	—	Mild dementia.
9	M.	31	Melancholia.	3 yrs. 11 days.	—	—	Dull, lethargic.
10	M.	57	Melancholia.	3 yrs. 8 mos.	—	—	Hypochondriacal. Delusions of suspicions.
11	M.	39	Mania.	16 mos.	—	—	Reserved & irritable.
12	M.	21	Melancholia.	15½ mos.	—	—	Very dull.
13	M.	24	Mania.	3½ yrs.	—	—	Dull and stupid.
14	F.	26	Mania.	16 mos. 1st attack	Neurotic heredity and domestic trouble.	Regular, quiet, cheerful, unselfish. Has had abscess of ear; cataract and anemia.	Stuporosa. Curable?
15	F.	38	Melancholia.	31 mos. 1st attack	Neurotic heredity and self-abuse, & marital worry.	Temperate, unsettled, indolent, dyspeptic.	No change. Excessive masturbation. Curable?
16	F.	28	Dementia (Alcoholic).	2 yrs. 1st attack	Cancer. Alcoholism.	Intemperate, cheerful & active. Has had psoriasis and peripheral neuritis.	Unchanged. Guarded.

* This scheme is illustrated by records of cases (which chanced to be available) submitted to the Journal hereafter to be registered in accordance with this scheme the observations will doubtless be more strictly in the present instance but few data, which are here recorded in footnotes) have been omitted. These head-
† Psoriasis cured and patient discharged able to walk with considerable ease.

MENT IN MENTAL DISORDERS, DRAWN UP BY JOHN B. LORD, M.B., C.M.,
ASYLUM, CARMARTHEN.*

Bodily Condition before Administration. Pulse, Weight, etc.	Period of Adminis- tration in days.	Amount of Thyroid Substance, [Extract in grs. or otherwise.]	Range of Tempr. and Maximum Tempr.	Mental Condition during and after Administration.	Bodily Condition during and after Administration. Pulse, Weight, etc.	Result.					Relapse.
						Recovered.	Improved.	No Improvement.	Affected pre- judicially.	(a) In what time? (b) How long main- tained.	
—	About 8 days.	In all these cases 60 grs. per diem were given = 480 grs. of Extract.	102°0	Stuporose with dirty habits.	During treatment lost 4 lbs. In 2 mos. gained 2 lbs.	—	—	1	—	—	—
—			99°2	More depressed and emotional.	During treatment lost 4 lbs. In 2 mos. lost 2 lbs.	—	—	—	1	—	—
—			99°0	Excited.	During treatment lost 4 lbs. In 2 mos. gained 9 lbs.	—	—	1	—	—	—
—			99°6	No change.	During treatment lost 5 lbs. In 2 mos. gained 3 lbs.	—	—	1	—	—	—
—			100°6	No change.	During treatment lost 10 lbs. In 2 mos. gained 8 lbs.	—	—	1	—	—	—
—			100°4	No change.	During treatment lost 14 lbs. In 2 mos. gained 4 lbs.	—	—	1	—	—	—
—			103°8	No change.	During treatment lost 29 lbs. In 2 mos. gained 26 lbs.	—	—	1	—	—	—
—			99°8	No change.	During treatment lost 4 lbs. In 2 mos. gained 1 lb.	—	—	1	—	—	—
—			99°2	Excited.	During treatment lost 3 lbs. In 2 mos. gained 7 lbs.	—	—	1	—	—	—
—			98°0	Worse.	During treatment lost 3 lbs. In 2 mos. gained 11 lbs.	—	—	—	1	—	—
—			98°4	No change.	During treatment lost 9 lbs. In 2 mos. gained 8 lbs.	—	—	1	—	—	—
—			99°8	Worse.	During treatment lost 9 lbs. In 2 mos. gained 5 lbs.	—	—	—	1	—	—
—			99°4	No change.	During treatment lost 5 lbs. In 2 mos. gained 6 lbs.	—	—	1	—	—	—
Average pulse, 83. Weight, 97 lbs. Temp., M. 98°3. Aft. 98°6. E. 98°5.	6	350	M. 98°3 A. 98°7 E. 99°0 Max. 100°2	No change during adminst., but in 17 days after ceasing, improvement began.	Average pulse 94, became irregular. Same faintness. Weight decreased to 93°5 lbs., but subsequently rose to 104°25. Some hysterical anuria.	1	—	—	—	a 2 mo. b 10 mo. Up 10 date	—
—	9	155	—	Restless and mas- turbating. Im- provement in 44 days.	Toothache and epigas- tric uneasiness.	—	1	—	—	a 3½ mo. b 6 wks.	1
Generally bad. Average pulse, 73. Weight, 98°7 lbs. Temp., M. 97°7. Aft. 97°9. E. 98°1.	6	330	M. 98°3 A. 98°5 E. 98°7 Max. 100°0	Unchanged during treatment. Im- provement began in 64 days.	Severe diarrhoea. Average pulse 90, reduced tension and feeble. Weight dropped to 91°5 but rose subsequently to 112 lbs.	1	—	—	—	a 6 mo. b 3 mo. Up to date.	—

by Drs. LEGGE, FARQUHARSON and HAY, and adapted to the scheme by permission of the authors. Should cases keeping with the headings adopted. For reasons of space, two additional columns (containing, as it happened, in-
ings are as follows:—Subsequent History; Additional Particulars.

No. of Case.	Sex.	Age.	Mental Disorder on Admission.	Duration and No. of Attack.	Causation.	Previous History, Personal and Family.	Mental Condition before Administration, and Prognosis.
17	F.	54	Melancholia (motor, delusional, suicidal, resistive.)	4 yrs. 1st attack	Insane heredity, influenza and domestic troubles.	Cheerful, active, latterly cynical. Has had jaundice and influenza.	Same, but not so delusional. Prognosis bad.
18	F.	44	Mania.	15 mos. 2nd atck.	Heredity, alcoholism. Previous attack.	Had an attack of religious melancholia for 2 mos. Intemperate, cheerful, active. Has suffered from anæmia, menstrual irregularity and uterine displacement.	Unchanged. Guarded.
19	F.	43	Stupor.	2 yrs.	—	—	Stuporose, apathetic. Habits dirty.
20	M.	39	Dementia.	14 yrs.	—	—	Very apathetic. Hardly ever speaks. Incurable.
21	M.	33	Melancholia with stupor.	2½ yrs.	—	—	Unchanged.
22	M.	44	Melancholia (Suicidal).	3 yrs.	—	—	Melancholia. Suicidal.
23	F.	35	Melancholia (Puerperal).	9 mos.	?	—	Same, with delusions of impending evil. Habits dirty.
24	F.	26	Mania (Puerperal).	1½ yrs.	?	—	Incoherent, excited, violent, noisy. Habits dirty. Unchanged.
25	F.	16	Melancholia and stupor.	—	—	—	Habits dirty.
26	M.	40	Delusional insanity.	11 yrs.	—	—	Unchanged.
27	F.	43	Melancholia.	3 yrs.	—	—	Becoming demented, apathetic, silent. Incurable.
28	F.	45	Delusional insanity.	3 yrs.	—	—	Delusional, choreic, excitable, noisy.
29	M.	36	Chronic Mania.	6 yrs.	—	—	Excited, mischievous, abusive.
30	F.	26	Congenital Imbecile.	—	—	—	Wet habits. Idiot of low type. Incurable.

* Habits remained clean.

Bodily Condition before Administration. Pulse, Weight, etc.	Period of Administration in days.	Amount of Thyroid Substance. [Extract in grs. or otherwise.]	Range of Temp. and Maximum Temp.	Mental Condition during and after Administration.	Bodily Condition during and after Administration. Pulse, Weight, etc.	Result.				(a) In what time? (b) How long Maintained.	Relapse.
						Recovered.	Improved.	No Improvement.	Affected Prejudicially.		
—	7	300	—	Return of dormant delusions. Abstinence for 2 days. Sleep reduced considerably, and at last became more destructive and violent and for a time more suicidal. Unchanged.	—	—	—	—	1	a 14 dys. b 7½ mo. Up to date.	—
Average pulse, 72. Weight, 102½ lbs. Temp., M. 97·5. Aft. —. E. 97·7.	8	480	M. 97·6 A. 97·8 E. 97·8 Max. 98·8	—	Average pulse 98·0, became more feeble. Lost 2½ lbs. in weight. Hæmic bruit developed.	—	—	1	—	a — b 6 mo. Up to date.	—
Cataleptic, sensibility much impaired. Knee reflexes diminished, skin moist and clammy. Amenorrhœa.	8	400	Max. 100·4 2nd d.	About 7th day became more intelligent, fairly bright, and sooke freely. Habits clean.	On 3rd day menstruation, rash, nausea, and vomiting; then skin became dry and clean. No catalepsy, sensibility more acute. Reflexes same.	—	1	—	—	a 7 dys. b 5 mo.	1*
Pulse wk. & slightly dicrotic, knee reflexes diminished. Plantar gone.	6	320	Max. 100·2 4th ev	Slightly brighter 4th day.	On 5th day, alarming prostration, pulse feeble, irregular, rapid, tongue tremulous, extremities cold, perspiration profuse. Continued for 4 weeks. Gained 4½ lbs. during treatment.	—	1	—	—	b very brief.	1
—	9	600	Max. 101·4	Considerable mental improvement.	—	—	1	—	—	—	1
Large goitre, mitral systolic murmur.	42	Glyc. Ex. m xx.	—	Gradual & permanent recovery.	—	1	—	—	—	b 1 mo.	—
Large goitre. Has a baby 1 mo. old.	10	540	Max. 99·4	Habits clean on 7th day, and gradual recovery.	Nausea, & tongue tremulous during treatment.	1	—	—	—	a 3 mo. b Up to date.	—
Sk n moist and clammy.	11	680	Max. 99	Improved to complete & permanent recovery.	At times, tongue tremulous, & much headache.	1	—	—	—	—	—
Skin greasy & rough; acne on face, menstruation not commenced.	20	560	Max. 100·8	Habits became cleanly, and brighter mentally. In 14 dys. relapsed, but kept clean habits. In 2 mos., recovery. No change.	Tongue tremulous, well marked rash, desquamation on 23rd day. Acne disappeared.	1	—	—	—	a 2 mo. b Up to date.	—
—	12	680	Max. 99·2	—	Restless.	—	—	1	—	—	—
Complains of headache when she speaks.	12	540	Max. 100·2	Brighter mentally. Relapse in 1 wk.	—	—	1	—	—	a — b 1 wk.	1
—	10	540	Max. 100·2	Slight mental improvement, but speedy relapse.	Temp. remained at 100 for about 3 wks, and then rose to 102·8, then normal in 1 wk.	—	1	—	—	b Very short time.	1
—	9	540	Max. 100·2	Considerable mental improvement for 1 mo. Habits clean.	—	—	1	—	—	a — b 1 mo.	1†
—	56	750	—	No effect.	—	—	—	1	—	—	—

† Habits remained clean for 1 year.

No. of Case.	Sex.	Age.	Mental Disorder on Admission.	Duration and No. of Attack.	Causation.	Previous History, Personal and Family.	Mental Condition before Admission, and Prognosis.
31	M.	42	Melancholia with Stupor.	4 mos.	—	—	Same, with attacks of excitement, and suicidal impulse. Wet.
32	F.	34	Congenital Imbecile.	—	—	—	Deaf mute. Incurable.
33	M.	31	Melancholia with Stupor, changed to Ch. Mania.	10 yrs.	—	—	Becoming demented. Habits dirty.
34	M.	29	Melancholia.	2½ yrs.	—	—	Suspicious, taciturn, depressed.
35	F.	40	Melancholia with Stupor (Puerperal).	3 mos.	—	—	Unchanged.
36	F.	18	Puerperal Mania.	2 mos.	—	—	Dull, stupid, apathetic, cannot converse rationally. Becoming demented.
37	F.	43	Melancholia.	3 yrs.	—	—	Hypochondriacal, depressed, incurable.
38	M.	63	Melancholia.	33 yrs.	—	—	Melancholia, suicidal.
39	M.	43	Melancholia.	7 yrs.	—	—	Hypochondriacal. Melancholia with stupor.
40	F.	58	Mania changed to Melancholia with Stupor.	3 yrs.	—	—	Excited, noisy.
41	F.	38	Mania.	1 yr.	—	—	Taciturn. Dirty habits.
42	F.	27	Melancholia.	6 wks.	—	—	Taciturn, stupid.
43	M.	28	Mania.	2½ yrs.	—	—	Stupid, apathetic, habits wet.
44	M.	31	Congenital Imbecile.	—	—	—	Incurable. Great depression. Suicidal.
45	F.	28	Puerperal Melancholia.	9 mos.	—	—	Unchanged. Habits dirty.
46	F.	23	Mania.	3 yrs.	—	—	Suicidal, epileptic.
47	F.	24	Melancholia (Epilepsy).	1½ yrs.	—	—	Dull, suicidal.
48	F.	32	Melancholia.	4 mos.	—	—	Dull, taciturn. Habits dirty.
49	F.	27	Mania.	1 yr.	—	—	Taciturn, etc., some imbecility. Habits dirty.
50	F.	21	Melancholia with Stupor.	10 mos.	—	—	

* Remains cheerful and free from delusions, but lazy, and rambles in talk.

Bodily Condition before Administration. Pulse, Weight, etc.	Period of Administration, in days.	Amount of Thyroid Substance, (Extract in grs. or otherwise.)	Range of Temp. and Maximum Temp.	Mental Condition during and after Administration.	Bodily Condition during and after Administration. Pulse, Weight, etc.	Result.					Relapse.
						Recovered.	Improved.	No Improvement.	Affected Prejudicially.	<i>a</i> In what time. <i>b</i> How long maintained.	
—	12	540	Max. 100.8	Considerable mental improvement, habits clean, repose in 1 mo. for 14 dys.	—	—	1	—	—	<i>a</i> — <i>b</i> Up to date.	1
nasal catarrh, chronic bronchitis, and eczema.	6	140	—	No mental effect.	On 6th day, fainted, pulse weak & irregular.	—	—	1	—	—	—
—	17	600	Max. 100	Brighter mentally, of improved habits.	—	—	1	—	—	<i>b</i> A few days.	1
—	10	520	Max. 100.6	Brighter mentally, and more cheerful.	Tongue tremulous, nausea, and a rash. In 3 wks. temp. rose to 100.4 and kept at that for 2 wks.	—	1	—	—	<i>b</i> Up to date.	—
—	10	600	Max. 99.0	Gradual & permanent recovery.	—	1	—	—	—	<i>a</i> 17 dys. <i>b</i> Up to date.	—
—	9	540	Max. 100.0	Recovered about 10th day, relapse 1 wk later for 1 mo.	Profuse perspiration tongue tremulous, rash. Subcutaneous tendinum.	1	—	—	—	<i>a</i> — <i>b</i> Up to date.	1
—	16	600	Max. 100.8	No change.	—	—	—	1	—	—	—
—	9	530	Max. 99.8	No change.	Great nausea & vomiting	—	—	1	—	—	—
—	7	350	—	No change.	Nausea & vomiting. Desquamation on the 9th day.	—	—	1	—	—	—
—	9	540	Max. 100.4	In a wk. after treatment slight improvement began.	Nausea, tongue tremulous, restless.	1	—	—	—	<i>a</i> 1 mo. <i>b</i> Up to date.	—
—	14	550	Max. 99.8	Excitement increased, very emotional. After 2 wks. improvement. Recovery in 6 wks.	—	1	—	—	—	<i>a</i> 8 wks. <i>b</i> Up to date.	—
Pulse weak.	11	560	N. In axilla.	Talkative on 5th day, noisy on 8th day. Habits much improved. Recovery in 6 wks.	Desquamation on 11th day.	1	—	—	—	<i>a</i> 6 wks. <i>b</i> Up to date.	—
—	10	600	Max. 99.8	No improvement.	Much vomiting.	—	—	1	—	—	—
—	9	540	Max. 99.6	Improvement in habits.	—	—	1	—	—	<i>b</i> a few wks.	1
Amenorrhœa.	9	540	Max. 100	Excitement on 8th day. Improvement in 3rd wk. Recovery in 4th wk.	Menstruation in 4th week.	1	—	—	—	<i>a</i> 4 wks. <i>b</i> Up to date.	—
—	10	60	Max. 99.2	Habits improved for 3 mos.	Vomiting.	—	1	—	—	<i>a</i> — <i>b</i> 3 mo.	1
—	10	540	Max. 100.0	Recovery in 2nd wk.	—	1	—	—	—	<i>a</i> — <i>b</i> 2 wks.	1†
—	9	540	Max. 100.0	Talkative 10th day. Recovered 4th wk.	Vomiting.	1	—	—	—	<i>a</i> 4th wk <i>b</i> Up to date.	—
—	9	540	Max. 99.2	No improvement.	Vomiting.	—	—	1	—	—	—
very greasy skin, face hairy.	17	600	Max. 100.2	Habits clean. Recovery gradually.	Skin clean and hair on face disappeared. Rash.	1	—	—	—	<i>a</i> 3 wks. <i>b</i> 3 wks.	1†

† Recovered subsequently.

‡ Second course tried without effect.

XLIII.

No. of Case.	Sex.	Age.	Mental Disorder on Admission.	Duration and No. of Attack.	Causation.	Previous History Personal and Family.	Mental Condition before Administration, and Prognosis.
51	F.	22	Puerperal Mania.	2½ yrs.	?	—	Unchanged.
52	F.	43	Mania.	7 yrs.	—	—	Recurrent excitement. Habits dirty.
53	F.	21	Mania.	2 mos.	—	—	Mildly excited.
54	F.	37	Mania.	9 mos.	—	—	Unchanged.
55	F.	24	Mania.	1 yr.	—	—	Excited, incoherent (Epilepsy 1 yr. ago).
56	F.	43	Melancholia.	1 yr.	—	—	Unchanged.
57	F.	53	Melancholia.	2½ yrs.	—	—	Unchanged.
58	F.	18	Mania.	1 yr.	—	—	Silly, incoherent. Habits dirty.

Out of 58 cases of various forms of Insanity.—17 Recovered, of which 14 were permanent.
 13 Improved, " 3 " "
 23 Did not improve.
 5 Were affected prejudicially.

Bodily Condition before Administration. Pulse, Weight, etc.	Per-iod of Adminis-tration in days.	Amount of Thyroid Substance. [Extract in grs. or otherwise.]	Range of Tempr. and Maximum Tempr.	Mental Condition during and after Administration.	Bodily Condition during and after Administration. Pulse, Weight, etc.	Result.				(c) In what time? (b) How long Main-tained.	Relapse.
						Recovered.	Improved.	No Improvement.	Affected Prejudicially.		
—	9	540	Max. 100·4	Increase of excitement during treatment.	Slight rash tongue tremulous.	—	—	—	1	—	—
—	14	600	Max. 100·8	No improvement.	Great irregularity and quickness of pulse about end of treatment which increased on latter being stopped. Slight rash.	—	—	1	—	—	—
Acne, skin moist, tongue white and furred. Pulse weak and irregular.	10	540	Max. 99·8	Improvement from 20th day.	Acne improved from 4th day, skin and pulse from 8th day.	1	—	—	—	^a — ^b Up to date.	—
—	11	655	Max. 102·0 16th d.	No improvement.	Vomiting.	—	—	1	—	—	—
—	9	540	Max. 99·2	Restless on 10th day. Improved on 11th day. Recovered a week later.	—	1	—	—	—	^b A few days.	1
—	9	540	Max. 99·4	No improvement.	—	—	—	1	—	—	—
—	9	540	Max. 100·0	No improvement.	—	—	—	1	—	—	—
—	10	600	Max. 99·8	Habits clean.	Nausea.	—	1	—	—	—	—

Cases 1 to 13.—Dr. W. F. FARQUHARSON, Garlands Asylum, Carlisle.

„ 14 to 18.—Dr. FRANK HAY, James Murray's Royal Asylum, Perth.

„ 19 to 58.—Dr. LEGGE, Derby County Asylum.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF COMMONS.

Suicides.

Sir Matthew White Ridley, in reply to Mr. William Corbett, said he was not aware that any useful purpose would be served by continuing the return as to the insane who committed suicide which was granted last year, and as it proved a very troublesome one to prepare he was afraid he must decline to do it. The number of insane persons generally who committed suicide would, of course, appear in the judicial statistics in the ordinary way.

Reformatories for Inebriates.

The Home Secretary, in response to Mr. Hobhouse, said—I cannot say when the Bill for the establishment of reformatories for inebriates is likely to be introduced. The Bill has been for some time in a forward state, but there are still remaining some important points which require to be settled.

The Case of Mrs. Beggs.

Mr. Murnaghan asked the Secretary for Ireland whether his attention had been called to the verdict of the coroner's jury recently given at Belfast at the inquest on the body of Mrs. Beggs, who died in the Belfast Lunatic Asylum. Whether he was aware that the eminent doctor who conducted the post-mortem examination found a number of her ribs and breast bone broken, and that the jury found that the bones were not broken at the time she was taken from her home to the asylum. Whether the doctors of the asylum had at any time, and, if so, at what date, discovered that her bones were broken. And whether, considering the facts disclosed at the inquest, the Government would, in the interests of inmates of Lunatic Asylums, have further enquiry made into the matter?—Mr G. Balfour, in reply, said that the facts were as stated in the first and second paragraphs of the question. The verdict of the coroner's jury was that the injuries were not received at the patient's house, and that there was no evidence to show when and how they had been received. Deceased was admitted to the asylum on January 5th, and on January 21st the asylum doctors discovered the injuries. An enquiry had been held into the matter by the Inspectors of Lunatic Asylums, who would forward their report to the Board of Governors of Asylums.

Private Lunatic Asylums.

Mr. Field asked the Secretary of State for the Home Department whether any regular inspection regarding the management of private Lunatic Asylums and their inmates was made and reported on by responsible Government officials; and whether the system and working of Private Lunatic Asylums would be inquired into and reported to the House.—Sir Matthew White Ridley replied that all licensed houses were regularly visited by the Lunacy Commissioners—those in the metropolitan area six times a year, and those outside that area twice. The latter are also visited six times a year by three justices and a medical practitioner appointed for the purpose by Quarter Sessions. He was not aware of any necessity for such an enquiry as the hon. member suggested.

Beri-Beri in an Irish Asylum.

Dr. Carew asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the present alarming condition of the Richmond Lunatic Asylum in Dublin; whether he was aware that, with accommodation available for only 1,000 patients, 1,714 were housed there in October last, and that in consequence of this over-crowding, beri-beri, a loathsome disease hitherto confined to the densely populated and filthy quarters of Chinese and other Eastern cities, has appeared, and of 113 patients attacked last year seven died up to December last; would he explain why, notwithstanding the repeated protests of two of the members of the Board of Control against overcrowding, no practical steps had been taken by that body to stamp out the disease, and whether, in the circumstances, the Government would see that immediate precautions were taken to prevent its spreading.—Mr. Gerald Balfour replied that the Irish Government

had been giving close and constant attention to the accommodation at the Richmond District Asylum and to the outbreak of beri-beri there. The number of patients on the asylum register at the end of 1896 was 1,728, of whom 59 were at Portrane. The present accommodation of the Richmond Asylum was for 1,393 patients, in addition to which provision had been made for 80 patients at Portrane and for 40 in the residence of the Resident Medical Superintendent (surrendered for that purpose), thus bringing up the present accommodation to 1,513. Further temporary accommodation for 220 patients was now being provided at Portrane. The number of deaths from beri-beri at Richmond during 1896 was eight, as against 123 deaths from various other causes. He might observe that the general death-rates in this asylum for 1895 and 1896 were the lowest recorded since the opening of the asylum. In 1895 the percentage of deaths from all causes was only 7.1 and in 1896 7.8, and comparing these rates with the death-rates in the principal English Asylums during 1896 he found that, with two exceptions, the rates in the English Asylums were much higher than at Richmond. Every effort had been, and was being, made by the Board of Control to stamp out the disease known as beri-beri and to provide adequate accommodation for the patients.—Mr. Carson (Dublin University): Is it proposed to make any permanent enlargement of the asylum? The right hon. gentleman spoke of a "temporary arrangement."—Mr. Gerald Balfour: I understand that a private Bill is in course of preparation or of being passed through the House for the purpose.

Proposed Conference on Insanity.

Mr. William Corbet has given the following notice of motion, viz.: "To call attention to the annually increasing numbers of the insane not only in the United Kingdom, but in every civilised country of the world; and to move that it is desirable in the interests of humanity that steps shall be taken to convene an International Conference to enquire into the cause of such increase and to report whether any and what measures can be adopted to arrest the spread of the disease."

Children in the Darenth Asylum.

Mr. Chaplin, in reply to Mr. Pickersgill, said—I am informed that there are no children in the Darenth Asylum who are feeble-minded but not imbecile. The children at the asylum are legally paupers. It is not the intention to remove the children from there.

Lunacy in England and Wales.

The Home Secretary, replying to Mr. Hobhouse, said—The enquiry into the causes of the increase of lunacy in England and Wales has been made, and the report laid on the table of the House. I am informed that copies of the report will be delivered almost immediately.

Lunatics and the Irish Workhouse.

Mr. Clancy asked the Secretary for Ireland whether he had received a copy of a resolution of the Rathdown Board of Guardians as to the insufficiency of accommodation for children and the lunatic poor in the Rathdown Union Workhouse and other workhouses in Ireland; whether it was the intention of the Government to comply with the wish expressed in that resolution that legislation should be proposed at an early date dealing with that subject; and, whether the Government intended to reintroduce, and make an effort to pass into law, this Session its Bill of last Session dealing with the reform of workhouse management and the amalgamation of unions.—Mr. G. Balfour: The reply to each of the three paragraphs of this question is in the affirmative.

Irish Lunatic Asylums and the Board of Control.

In reply to Mr. Shee, Mr. G. Balfour said that the whole question of Lunacy Administration in Ireland was one requiring attention, though he could not promise that he would be able to deal with the matter in the immediate future. The fullest opportunity was uniformly afforded the local authorities to submit their views on any plans proposed for improved or increased accommodation, and these views receive the most careful consideration of the Board of Control, with the utmost desire to adopt them, so far as might be found practicable.

Habitual Offenders in Scotland.

Sir Charles Cameron gave notice that on this day four weeks he would call attention to the Report of the Departmental Committee on habitual offenders in Scotland, and move a resolution.

ABSTRACT OF THE LUNACY ACTS AMENDMENT BILL, 1897.

Section 1.—(1.) In subsection six of section eleven of the principal Act (which limits the time during which an urgency order is to remain in force) “four days” shall be substituted for “seven days.”

(2.) “Every urgency order shall be accompanied by a statement, to be made and signed by the person who signs the urgency order, and by the medical practitioner who signs the medical certificate on which the urgency order is founded, that it is necessary for the safety and proper treatment of the alleged lunatic or for the safety of others, that he should be forthwith placed under care and treatment, and showing fully and specifically the reasons why an urgency order is required.”

“Section 2.—(1.) It shall be sufficient for the purposes of section eight of the principal Act, that a patient be taken before or visited by the judicial authority who made the order for his reception as a patient.”

(2, 3, 4.) Provide that any person who is *ex-officio* a Justice of the Peace may be appointed as a “Judicial Authority”; that lists of the names and addresses of Justices appointed to act (sec. ten) shall be sent to the Commissioners and Masters in Lunacy and that no fees shall be payable for proceedings before a “Judicial Authority.”

Section 3.—Provides that the asylum need not be named in a reception order when there is more than one asylum in a county or borough.

Section 4.—Refers to the suspension of summary reception orders.

Disqualifications for Signing Medical Certificates.

“Section 5.—Whereas it is expedient to extend the disqualifications for signing medical certificates in support of a petition for a reception order, there shall be added to the end of subsection one of section thirty-two of the principal Act, the words, ‘(e) The person who makes the reception order,’ and at the end of subsection three of the same section the words, ‘or any officer or servant in the employment of such committed, or in a licensed house under an order made on the application of or under a certificate signed by a licensee of any licensed house, or any person in the employment of any such licensee.’”

Section 6.—Provides that particulars are to be specified in case of leave of absence of patient for health.

Section 7.—Makes sections sixty-four, sixty-five and (sub-section six of) one hundred and five of the principal Act apply to Borough Asylums.

Section 8.—Facilitates the removal of a lunatic from a Workhouse by a justice of the area from which the lunatic was sent.

Jurisdiction in Cases of Small Property.

“Section 9.—(1.) If it is proved to the satisfaction of a Judge of County Courts that a person within the District of that Judge is of unsound mind and incapable of managing his affairs, or is through mental infirmity arising from disease or age incapable of managing his affairs, and that his property does not exceed five hundred pounds in value, or that his income does not exceed fifty pounds a year, the Judge may, in relation to that person, exercise all the powers (relating to the management and administration of property) which are by sections one hundred and sixteen to one hundred and twenty of the principal Act conferred upon the Judge and Masters in Lunacy.

(2.) The jurisdiction conferred by sections one hundred and thirty-two and three hundred of the principal Act on a Judge of County Courts may be exercised also by a Court of Summary Jurisdiction.”

Section 11.—Extends the power given by section two hundred and five in regard to special enquiries as to the care and treatment of lunatics, &c., and gives power of fine up to fifty pounds for non-compliance with an order to attend such enquiry.

Section 12.—“The Commissioners shall have power, subject to the conditions on which licenses may be granted under the principal Act, to grant a license to any house not previously licensed, intended to be used solely for the reception of idiots and imbeciles, and intended to be registered under the Idiots Act, 1886, and to renew the licence from time to time, and if the house is not conducted to their satisfaction, to decline to renew any such licence, or to revoke the licence and the registration of the house.”

Sections 13, 14, 15, 16, 17, 18 and 19 practically give the Commissioners in Lunacy the same relations to hospitals as to other asylums in regard to boarders, number of patients, amendment of regulations, registration of branch establishments, alterations and additions, and management. Section 19 provides that accommodation provided on plans, etc., approved by the Secretary of State “shall not, without the approval of the Commissioners, be appropriated or used for other purposes than those shown on the plans.”

Pensions and Allowances to Officers and Servants of Asylums.

Section 23.—“(1.) The provisions of the Poor Law Officers Superannuation Act, 1896, shall apply to the Visiting Committee and to every officer of an asylum in like manner, as nearly as may be, as they apply to guardians and their officers and servants, with the following modifications:—

(a.) A Secretary of State shall be substituted for the Local Government Board wherever the Local Government Board is referred to in the Poor Law Officers Superannuation Act, 1896.

(b.) The period of three months from the commencement of this Act shall be the period within which any existing officer of an asylum may signify, in writing, to the Visiting Committee his intention not to avail himself of the provisions of this section. Any existing officer of an asylum who has given such notice as aforesaid shall remain subject to the provisions of sections two hundred and eighty, two hundred and eighty-one, and two hundred and eighty-two of the principal Act, as if this Act had not been passed, and those provisions shall, for the purposes of this enactment, continue in force notwithstanding their repeal by this Act. Notwithstanding anything in this Act contained the provisions of the Poor Law Officers Superannuation Act, 1864, and the Acts amending the same, shall not apply to any existing officer of an asylum who has given such notice as aforesaid.

Section 24.—Where any officer of an asylum is injured (a) in the actual discharge of his duty; and (b) without his own default; and (c) by some injury specifically attributable to the nature of his duty; the Visiting Committee may grant to him such annual allowance or, if he dies from the injury, to his widow or mother, and to his children, or any of them, such annual allowance or gratuity as the Visiting Committee may consider reasonable, subject to the following regulations:—

(a.) An allowance granted to an injured person under this section shall not be less than six-sixtieths nor more than twenty-four sixtieths of the value of his salary and emoluments at the date of the injury;

(b.) Such allowance to an injured person, together with any superannuation allowance to which he is entitled, shall not exceed the amount of his salary and emoluments at the date of the injury; or three hundred pounds a year, whichever is less;

(c.) An allowance granted to the widow of an injured person shall be payable only so long as she remains unmarried and of good character, and shall not exceed ten-sixtieths of the injured person's salary and emoluments at the date of the injury, or fifteen pounds a year, whichever is greater;

(d.) An allowance granted to any child of an injured person who leaves a widow surviving him shall be payable only until the child attains the age of fifteen years, and shall not exceed one-sixth of the greatest allowance which might have been granted to the widow, and the aggregate of the allowances granted to the children of any injured person shall not exceed the greatest allowance which might have been granted to the widow;

(e.) An allowance granted to any child of an injured person who leaves no widow surviving him shall be payable only until the child attains the age of

fifteen years, and may be of twice the amount which might have been granted to the child had the injured person left a widow surviving him;

(f.) If any widow of an injured person to any child of whom an allowance shall or might have been granted under sub-clause (d.) of this section shall die during the period for which such child is or might have been entitled to an allowance, the Visiting Committee may make an allowance or increase the allowance already made to the child upon the same conditions as if the injured person had died immediately after the widow;

(g.) An allowance shall be granted to the mother of an injured person only if he leaves no widow surviving him, and his mother was wholly dependent on him at the time of his death, and such allowance shall be payable only if and so long as the mother remains of good character, and shall not in any case exceed the greatest allowance which might have been made to his widow had he left a widow surviving him: Provided that in any case where the mother of an injured person is not entitled to receive any allowance by reason only of the fact that the widow of the injured person survived him, then, should the widow die in the lifetime of the mother, the allowance, if any, made to the widow may be continued to the mother for her life if she remains of good character;

(h.) In the case of an injured person who dies from the injury, and whose service at the date of the injury was less than five years, an annual allowance shall not be granted to his widow or mother and children, but there may be granted to his widow, if any, or, if none, to his mother, a gratuity not exceeding one-half of the annual value of the salary and emoluments of the deceased at the date of the injury, and to each child a gratuity not exceeding one-twelfth of such annual value, but so that the total of the gratuities to such widow or mother and children shall not exceed such annual value.

Section 25.—The contributions to be made by any officer of an asylum pursuant to this Act shall be carried to and form part of, and all allowances and gratuities granted under this Act shall be paid out of, the county or borough fund as the case may be."

Remuneration for Labour of Pauper Lunatics.

"Section 28.—(1.) For the purpose of extending the useful occupation of patients and encouraging them to engage therein, the Visiting Committee of an asylum may, in addition to the expenses of maintenance, allow remuneration to each pauper lunatic for his labour in the asylum, at a rate not exceeding one-tenth of the sum at which the Committee estimate the value of the labour, and the remuneration so allowed shall be paid or applied for his benefit in such manner as the Committee direct.

(2.) Any remuneration allowed under this Section shall be paid out of the same fund as the expenses of the maintenance of the lunatic."

Misstatements in Forms, etc.

"Section 29.—(1.) If any person wilfully or through negligence (a) makes a misstatement of any material fact in any statement accompanying an urgency order or in any petition, statement of particulars, or reception order under the Lunacy Acts, 1890 to 1897; or (b) makes a misstatement in any medical or other certificate, or in any statement or report of bodily or mental condition under the Lunacy Acts, 1890 to 1897, or under any rules under the principal Act, he shall be liable on summary conviction to a fine not exceeding fifty pounds, or to imprisonment for a term not exceeding six months, or on conviction on indictment to a fine not exceeding two hundred pounds, or to imprisonment, with or without hard labour, for a term not exceeding two years, or to both.

(2.) A prosecution under this section shall not take place except by order of the Commissioners or by the direction of the Attorney-General."

Offences against Patients.

"Section 30.—Section three hundred and twenty-two of the principal Act shall extend to striking, and shall include any person employed in the care of a single patient, and accordingly in that section there shall be inserted after the word 'otherwise' the words 'or any person employed in the care of a single patient strikes.'"

The nine other clauses refer to Chancery procedure, etc., etc.

ABSTRACT OF THE POOR LAW OFFICERS' SUPERANNUATION ACT, 1896.

Superannuation.

Subject to the provisions of this Act, every officer and servant in the service . . . of the guardians of a union or parish who shall become incapable of discharging the duties of his office with efficiency, by reason of permanent infirmity of mind or body . . . or who shall have attained the age of sixty years and have completed an aggregate service of forty years, or who shall have attained the full age of sixty-five years, shall be entitled on resigning or otherwise ceasing to hold his office or employment, to receive during life out of the common fund of the union, a superannuation allowance according to the scale laid down in this Act.

An officer or servant shall not be entitled to an allowance on the ground of old age unless he has completed the full age of sixty years.

Where an officer or servant has attained the age of sixty-five years and the guardians are of opinion that it would be expedient in the interests of the public service that he should cease to hold his office . . . it shall be competent for them to require him to retire upon payment to him of the superannuation allowance to which he may be entitled under this Act.

The scale for superannuation allowances under this Act shall be as follows, that is to say :—“An officer or servant who has served for ten years but less than eleven years shall be entitled to an annual allowance equal to ten-sixtieths of the average amount of his salary or wages and emoluments during the five years ending on the quarter day which immediately precedes the day on which he ceases to hold his office or employment, with an addition of one-sixtieth of such average amount for every additional completed year of service until the completion of a period of service of forty years, when a maximum allowance of forty-sixtieths shall be granted.”

All service by an officer or servant under any authority or authorities to whom this Act applies shall be aggregated and reckoned for the purposes of this Act. . . .

The guardians in computing the amount of superannuation allowance to any officer or servant may, in consideration of peculiar professional qualifications, or of special circumstances, and with the consent of the Local Government Board, add a number of years not exceeding ten to the number of years which the officer or servant has actually served in the aggregate. . . .

An officer or servant who has not become entitled to a superannuation allowance, and who loses his office or employment by reason of a reduction of staff, or of any alteration of areas or boundaries, or otherwise ceases to hold his office or employment by reason of bodily injury not occasioned by his own default, or of any other cause whatever other than his own misconduct or voluntary resignation, shall be entitled to receive, out of the common fund of the union, a sum equal to the amount of all his contributions to any such fund under this Act; but if he claims under this section and subsequently obtains a fresh office or employment, he shall not be entitled to reckon his service before obtaining such fresh office or employment towards a superannuation allowance under this Act, unless upon obtaining such fresh office or employment he pays the amount so received to the common fund of the authority under whom he obtains such fresh office or employment.

In any such case of loss of office or employment as aforesaid, the guardians may also, if they see fit, with the sanction of the Local Government Board, grant to the officer or servant a gratuity, payable out of the common fund of the union, not exceeding twice the amount of his salary or wages and emoluments during the year ending on the quarter day which immediately precedes the day on which he ceases to hold his office or employment.

Provided that when such loss of office or employment occurs in a case in which the death, resignation, or insanity of one of the holders of a joint appoint-

ment vacates the office of the other, the officer or servant whose office or employment is so vacated, shall, unless he is reappointed by the guardians, and except where in the case of husband and wife the joint appointment is terminated owing to the misconduct of one of them, be entitled to receive during life, out of the common fund of the union, a superannuation allowance, according to the scale laid down in this Act, if such officer or servant has attained the age of fifty years, or has served for not less than twenty years. . . .

Subject to the provisions of this Act, every officer and servant in the service or employment of the guardians of a union shall contribute annually for the purposes of this Act a percentage amount of his salary or wages and emoluments according to the scale laid down by this Act, such amount to be from time to time deducted from the salary or wages payable to him and to be carried to and form part of the common fund of the union.

The percentage amounts to be deducted annually for the purposes of this Act shall be as follows, that is to say:— In the case of officers and servants with less than five years' service at the passing of this Act, or appointed after the passing of this Act, two per cent. of the salary or wages and emoluments for each year: In the case of officers and servants with more than five and less than fifteen years' service at the passing of this Act, two and a half per cent. of the salary or wages and emoluments for each year. In the case of officers and servants with more than fifteen years' service at the passing of this Act, three per cent. of the salary or wages and emoluments for each year. . . .

The Local Government Board may, if they think fit, determine any question which may arise between guardians or any other authority to whom this Act applies and any officer or servant, and which may be referred to them by either party, as to the right to or the amount of superannuation allowance of such officer or servant, and the decision of the Local Government Board shall be binding and conclusive. . . .

Besides what is printed above there are sections dealing with cases of subsequent appointments, forfeiture for fraud etc., regulations as to returns, and to existing officials, etc., etc.

THE LUNACY BOARD OF IRELAND.

An order of the Lord-Lieutenant and Privy Council was published in the *Dublin Gazette* of April 16, reconstituting the Board of Commissioners for the general control of asylums for the lunatic poor in Ireland, and appointing the following to serve as Commissioners:—Mr. Justice Holmes, Mr. Thomas Robertson (Chairman of the Commissioners of Public Works), Dr. O'Farrell (Inspector of Lunatic Asylums), Sir Francis Cruise, M.D., Mr. Charles Kennedy, J.P., and Mr. J. Malcolm Ingles, J.P.

MEDICO-LEGAL CASES.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

Regina v. Kempshall.

Catherine Kempshall, 32, of no occupation, was indicted for the wilful murder of Edgar Holland. Prisoner had lived with the deceased as his mistress; had brought an action against him for breach of promise of marriage, which was settled out of Court, the plaintiff to receive £1,000 without costs, to give up all letters and to undertake not to molest the defendant. This agreement the plaintiff subsequently repudiated on the ground that she was not a consenting party. The action was therefore proceeded with, and judgment was given against her in July, 1895. On the result being declared the prisoner had

an outburst, which is described by the reporter as one of "positive frenzy," in which she rushed at the defendant in Court exclaiming, "You beast! pay me! pay me!" and continued to struggle until she was quite exhausted. On the same day she was brought up at the Central Criminal Court for attempting to discharge a pistol at a sister of the defendant, and acquitted. Subsequently she appealed against the result of the trial of the civil action, and her appeal was dismissed. She continued for years a course of annoyance and molestation against the deceased, against his family, and against the solicitors and others who had been concerned in defending him. She broke the windows of a solicitor's office, she assaulted solicitors' clerks, she threatened repeatedly to murder not only the deceased but his solicitors; and she declared that solicitors, counsel, and judges had been bribed by the deceased to defeat the ends of justice and to persecute her. At length she went by appointment to meet the deceased and his solicitor at the office of the former. The deceased promised to provide for her, but remonstrated with her for pretending that he had promised to marry her, upon which she retorted, "You lie, you beast!" and discharged four shots from a revolver at him, inflicting wounds which were ultimately fatal.

At the trial it was proved that prisoner had repeatedly threatened to take the life of the deceased, and had planned with considerable ingenuity to follow him to France and carry out her purpose there, in order that she might have the advantage of the notorious lenity of a French jury.

For the defence, Dr. Wiglesworth proved that he had been instructed by the Home Office to examine the prisoner as to her state of mind. There could be no doubt that for some time before the murder her mind was dominated with the idea that she was the victim of a conspiracy, and that the deceased, together with some of the most eminent members of the legal profession, were banded together against her. He thought that at the time the murder was committed the prisoner suffered from delusions. Whilst sane on other topics this delusion dominated her mind and influenced her conduct.—Cross-examined: Do you mean to say that when she shot Mr. Holland she had no idea she was doing wrong?—Witness: I do not mean to say that at all.

Dr. Beamish, medical officer of Walton Prison, deposed that it was obvious that prisoner suffered from delusions with respect to the conspiracy against her. As her health deteriorated those delusions would obtain almost complete dominance over her. He was of opinion that the prisoner was suffering from a form of insanity known as mania of persecution.

Dr. Davies gave evidence as to insane utterances of the prisoner, and was of opinion that when she shot Mr. Holland she did not know that she was doing wrong. Where Mr. Holland was concerned she was insane.

The Judge (whose summing up is very inadequately reported) appears to have charged the jury in the strict terms of the law. The mere existence of a delusion in the mind of a person charged did not necessarily render that person irresponsible. The jury had to consider the nature of the delusion, and unless it was of such a nature that if true it would have justified the act, they must find the prisoner guilty.

The jury found a verdict of guilty, with a strong recommendation to mercy. Liverpool Assizes, March 19 (Mr. Justice Collins).—*Liverpool Mercury* March 20.

Alienists will probably agree that this wretched woman really is insane, and there is little probability of the capital sentence being carried into effect.* The case is important, as being the first case that has occurred since the appointment of the Criminal Responsibility Committee three years ago, in which an unqualified verdict of guilty has been given in the face of strong and unanimous medical evidence that the prisoner was insane. Furthermore, there can be no doubt that this verdict was due to the terms in which the jury were charged by the judge. He appears to have told them that it was necessary for the

* She was subsequently reprieved and sent to Broadmoor.

defence to show, not only that the prisoner had a delusion, not only that the delusion was calculated directly to inspire the criminal act, but that in addition it was of such a character that, if true, it would have justified the act. This reliance on the part of the Bench to a legal position which has of late years been quietly sinking into oblivion is much to be regretted; and it is the more to be regretted since it occurs in the case of a judge recently elevated to the Bench, and belonging to a younger generation upon which the hopes of our profession for an interpretation of the law more in accordance with the principles of modern science are largely built. At the same time it must be pointed out that the judge had much justification for taking the view that the prisoner ought to be convicted. Whatever symptoms of insanity she had displayed at and subsequent to the time of the crime she had displayed for months and years before that time. She had repeatedly been in prison, and had there been under the notice of the prison medical officers. Whatever her mental peculiarities they had not been concealed. They had been open and notorious; the subject of reports and editorial comments in the newspapers. And yet, although her conduct has been outrageous, and her actual violence and murderous threats had been matters of public notoriety for years, no step had been taken to place her under control. The judge might very well have argued that if her insanity was not sufficiently established to enable her to be put under control, it was not sufficiently established to exempt her from the punishment she had incurred. The responsibility for the crime lies really not so much with the prisoner as with the state or the administration of the law which allowed her to be at large.

Winkle v. Bailey and Others.

A lunatic detained in the Lancaster Moor Asylum, who had been in the Wilmington Workhouse, and had been removed to the Asylum under an order of the Chairman of the Guardians, was found by the relieving officer to be entitled to a sum of money, amounting to about £225, £165 of which was in the hands of trustees. The guardians thereupon obtained from the justices a summons against the trustees, under Section 299 of the Lunacy Act, and on this summons an order was made by two justices to seize the sum in the possession of the trustees. The trustees refused to deliver the money on the ground that the Master in Lunacy had made an order appointing the Official Solicitor receiver of the personal property of the lunatic. The order also directed the receiver to pay the money already due for the maintenance of the lunatic, and whatever should become due while she remained in the Asylum. In spite of this notice the guardians endeavoured to levy the sum from the trustees by distress and sale of their goods. The Official Solicitor, as next friend of the lunatic, then applied for an injunction to restrain the proceedings of the guardians.

Mr. Justice North said that the guardians had acted most improperly. He made an order that the trustees should hand over the £125 without prejudice to their claim for costs, etc., to the receiver, and that the guardians should pay the costs.—Chancery Division.—*Times*, December 11th.

The Recent Lunacy Commission at Bolton.

At the Bolton County Court, during the last week in January, Mr. Fischer, Q.C., one of the Masters in Lunacy, was engaged, with the assistance of a jury, in holding an enquiry respecting the state of mind of Mr. Arthur Knowles, a Bolton cotton spinner. The proceedings were instituted on the petition of the wife, and the case, which was of a somewhat unusual and painful nature, created much local interest. In such cases the rule is laid down that evidence relating to the presence of insanity in the alleged lunatic must be restricted to a period of two years preceding the inquisition. The testimony of the witnesses, both lay and medical, was of a contradictory character. Three medical men, including the family attendant, testified to the defendant's mental incapacity; on the other hand, several experts gave it as their opinion that he was capable of managing his affairs. Between the latter and the petitioner's counsel there was a pretty

display of dialectical fencing. The most remarkable feature in the case was that it was admitted by the defence that in May, 1895, the defendant was of unsound mind. Previously to this he had several attacks of influenza, the last of which was followed by a slight attack of melancholia. Always of a religious turn of mind, he became more intensely so, declared he was Jesus Christ, and at Ilkley Moor on one occasion denuded himself of his clothing in a public place. Subsequently he associated himself with a peculiar sect who believed in faith-healing, and roamed about the country attending holiness conventions, returning to his home accompanied by other believers, his inferiors in social status, to whose presence in the house his wife naturally objected. Space forbids entering into all the salient features of the case, but there can be no doubt that the verdict arrived at by the jury was the correct one—viz., that he was of unsound mind and incapable of managing his affairs, for it is safe to say that if left to his own devices his religious mania would have become more intense, and hopeless insanity would probably have supervened.—*The Lancet*.

The Queen v. the Commissioners in Lunacy.

This was a rule calling upon the Commissioners in Lunacy to show cause why a *mandamus* should not issue requiring them to direct the discharge of Captain R. C. Cockerill, at present detained as a lunatic in Holloway Sanatorium. Captain Cockerill had applied to the Commissioners to be discharged under section 49 of the Lunacy Act, 1890. That section provides that an order for the examination by two medical practitioners authorised by the Commissioners of any person detained as a lunatic in any institution for lunatics may be obtained from the Commissioners upon the application of any person, whether a relative or friend or not, who satisfies the Commissioners that it is proper for them to grant such order; and the section further provides that on production to the Commissioners of the certificates of the medical practitioners so authorised, certifying that after two separate examinations, with at least seven days intervening between the first and second examinations, they are of opinion that the patient may without risk of injury to himself or the public be discharged, the Commissioners may order the patient to be discharged at the expiration of ten days from the date of the order. Certificates under the section had been given by Dr. Savage and Dr. Mercier. Dr. Savage in his certificate stated that he had come to the conclusion that Captain Cockerill, while still having unusual ideas on religious subjects, and though still hearing voices, yet, in Dr. Savage's opinion, did not require detention in an asylum. Dr. Savage further stated his belief that Captain Cockerill had mental power enough to resume his duties, the only point in any way likely to cause trouble being the idea that he had a mission to unite all creeds and that in pursuit of this idea he might be troublesome to "eminent scholars." The Commissioners, however, after enquiries into the case, came to the conclusion that it was not a case in which an order for discharge should be made, and they refused to make the order.

Mr. H. Sutton appeared for the Commissioners in Lunacy. He argued that section 49 of the Lunacy Act, 1890, invests the Commissioners with a discretion and does not impose a duty upon them to discharge a lunatic whenever the certificates mentioned in the section have been made. Captain Cockerill was not without a remedy if the rule was discharged, since he might apply to a Judge in Chambers for an order under section 90 of the Act, in which case the question of his sanity would be determined by a jury.

Mr. H. Tindal Atkinson appeared for Captain Cockerill in support of the rule. He argued that, upon receipt of the certificates mentioned in the section, it becomes the duty of the Lunacy Commissioners to exercise the power to direct the discharge of a patient which is vested in them by the section. If this was not so, a person once received into an institution for lunatics might be arbitrarily detained for life. Section 90 of the Act did not authorise the presentation of a petition by the patient himself, and therefore the only remedy available to the patient himself was under section 49, and that would be defeated if the section were read as giving the Commissioners a discretion. He referred to "*Julius v. the Bishop of Oxford*" (L. R. 5, App. Cas., 214).

Mr. Justice Cave said the rule must be discharged. It was clear that section 49 of the Lunacy Act, 1890, empowers the Commissioners to order a patient to be discharged. But it was argued that the section not only empowers but requires them, under certain circumstances, to order the discharge. The general management of lunatics was in great measure intrusted to the Commissioners, and most elaborate provisions were made enabling them to exercise care of, and control over, lunatics. It would be most extraordinary if the Legislature, after making all these provisions, had with a single stroke of the pen given a power to supersede the decision of the Commissioners to two medical men with regard to whose qualification no rule was laid down; for the section could not be read as enabling the Commissioners to select the medical men who should make the examination. They were merely to be ordinary medical men against whose qualification as medical men there was nothing to be said. It was argued that upon receipt of certificates from two such men the discharge of the lunatic must be ordered. He could not conceive that that would be the intention of the Legislature. He was therefore not satisfied that it was the duty of the Commissioners to order the discharge. Then if the Commissioners had a discretion he entirely repudiated any suggestion that their discretion could be reviewed by the Court. The rule must be discharged.

Mr. Justice Grantham concurred.

Court of Session.

Lord Kinnear and a jury sat in the Court of Session on 22nd April for the purpose of enquiring whether Christopher Seton is insane or not. The application was presented by James Wallace Seton, Edinburgh, a brother of the ward.—Dr. Clouston, Superintendent of the Royal Morningside Asylum, stated that Christopher Seton was brought to the asylum on 6th April, 1887, under a warrant by the Sheriff. Witness reported to the Commissioners that Mr. Seton was suffering from mania. At that time Mr. Seton believed that he was heir to one of the Scottish Earldoms. He was violent in his conduct, dangerous to others, and by reason of his morbid exaltation of mind, was quite unable to look after himself or his affairs. At present he was not so acutely insane as he was when admitted to Morningside, but he still entertained the same general kind of delusions. He now believed that Craig House, where he lived, and which was part of the asylum, belonged to him, and all that it contained. He heard voices that did not exist. He was incoherent, and was unable to carry on rational conversation or to take a rational interest in reading. In the opinion of witness Mr. Seton was absolutely incapable of taking care of himself or of looking after his affairs. His mental condition was worse as regards the prospect of recovery than when he entered the asylum. Physically he was in excellent health.—Dr. Middlemas, Assistant Superintendent Craig House, corroborated.—James Wallace Seton stated in evidence that he was the only surviving brother of the ward, who was never married.—The jury retired to see Christopher Seton, who was in one of the adjoining rooms, and on their return answered that in their opinion Christopher Seton was insane, and that his brother was his nearest agnate, or male relative.

This trial took place under the process of cognition, which is now very rarely put in action. There have been three cases in Dr. Clouston's experience, all at the instance of the nearest male relative on the father's side for the purpose of replacing the *curator*. No abuse was alleged in any of the cases referred to.

THE MAINTENANCE OF PAUPER LUNATICS.

The President of the Local Government Board received a deputation from the County Councils Association in reference to the growing burden imposed upon the rates by the increase of the number of persons confined in lunatic asylums. The deputation consisted of Sir John Hibbert, Lord Thring, Mr. Hobhouse, M.P., Sir E. Edgecombe (Dorset), Mr. M. F. Blackiston (Clerk to the Staffordshire County

Council), Mr. F. C. Hulton (Clerk to the Lancashire County Council), Mr. C. B. Hodgson (Clerk to the Cumberland County Council), Mr. Trevor Edwards (Solicitor to the West Riding County Council), and the Rev C. Royds, Mr. J. Brierley, Mr. B. Carver, and Mr. T. Scholfield, members of the Lancashire Asylums Board. The deputation recommended that the grant of 4s. a week at present given to Boards of Guardians to pay for pauper lunatics in County Asylums, Registered Hospitals, and Licensed Houses should also be given for chronic pauper lunatics (whom they defined as harmless lunatics), who are maintained in workhouse wards under special regulations and to the satisfaction of the Commissioners in Lunacy; that, as it is not desirable that idiots (idiots and imbeciles from birth or early age) should be treated in a lunatic asylum, the 4s. grant should, wherever idiots are kept at the public expense, be payable in regard to such idiots to the authority maintaining them to the satisfaction of the Commissioners in Lunacy; that each County Council should be required to appoint visitors of those idiots in respect of whom the 4s. grant is made, and who are kept in places other than lunatic asylums; and that it is not desirable to express an opinion on the question of extending the 4s. grant to idiots boarded out or maintained at home. Mr. Chaplin, in reply, said he was not prepared to give a definite answer as to whether he could advise the Government to bring in a Bill to give effect to the recommendations. He required time to consider the matter more fully, and especially to enquire how the Boards of Guardians throughout the country would be affected if the proposals of the County Councils Association became law.

CHILDHOOD SOCIETY.

Sir Douglas Galton writes to the *Times* of 1st March last as follows:—

When the Royal Commission on the Blind, &c., recommended special care for "the children feeble minded but not imbecile," their evidence was derived from the scientific enquiry now intrusted to this society. So also the departmental committees on Poor Law schools and on reformatories received most important evidence as to the *status* of the children from the same voluntary source as well as from official sources. This society has been formed to continue and extend the work hitherto promoted by various connected committees; its objects are to supply information concerning mental and physical conditions of children in relation to education, such as indicate the special needs of certain groups. It is also prepared to report on children in schools and institutions, whether in London or in the provinces, as well as to give addresses on the study and classification of children.

To enable the society to carry on a useful scientific public work and continue research as to conditions of childhood under various conditions of environment funds are urgently needed. It is estimated that the expenses of reporting on 50,000 children, say in 25 towns, and giving addresses in each on the study and classification of children might be met by a fund of £1,000. Such enquiry would enable the educational authorities to know the numbers of children in various physiological groups and the exceptional cases existing within their area; the special needs indicated; and the effects of local environment. It seems strange that such knowledge has not been demanded in past years; but with the rapid extension of public education the matter cannot be deferred without danger of making mistakes.

The society invite all who are interested to enrol themselves as members and appeal to those who have means to contribute to their funds.

CARE OF THE FEEBLE-MINDED.

An appeal has lately been made for support of the National Association for Promoting the Welfare of the Feeble-Minded, which was formed 18 months ago with the object of combining, encouraging, and establishing all over the country homes for this purpose. It is working in cordial co-operation with the managers

of existing institutions. It has already started a new home for feeble-minded girls in the west of London, and is at this moment collecting funds and looking for quarters for a similar home for boys. The list of subscribers is, however, quite inadequate to enable the work to be carried out to the fullest extent, and therefore an appeal is made to the public for support of an institution which not only relieves the very feeblest of our fellow-creatures, but aims at so assisting and educating them that a proportion of them, at any rate, may be able to take their share in the world's labour and hold their own, notwithstanding the initial defects in their constitution. Contributions should be sent to the Secretary, Miss Paul, 27, Percy Street, London, W.

MR. W. J. CORBET, M.P., AND LUNACY REFORM.

Mr. Corbet has been writing in the *Westminster Review* this time. He abuses the Commissioners in Lunacy, he condemns Private Asylums, and he protests against the propagation of the race by those who have been insane. Mr. Corbet's opinions and Mr. Corbet's methods are all his own, and he has been corrected so often that it is sheer waste of space to return to the task. If he were to devote his energies to the increase of the staff of Commissioners, to the regulation of incompetent and illicit private care, and to the dissemination of reasonable teaching as to the prevention of insanity, Mr. Corbet might yet be a power for good. In the meantime he is, to the extent of his ability, detrimental to the cause he has at heart.

GLASGOW DISTRICT ASYLUM AT GARTLOCH.

This institution has now been completed and declared open. It consists of two parts, asylum and hospital. The former is for chronic and incurable patients, and contains 380 beds. It consists of four large blocks, three storeys in height, with boot and bath-rooms attached. These blocks are connected with the administrative and official departments by long corridors, under which are subways where are found the heating pipes, water supply pipes, and electric light cables.

The hospital is a separate building, and has a separate kitchen and dining hall, while for asylum and hospital there is a common recreation-room. It contains 150 beds and is principally of one storey. In it are the admission wards, wards for the treatment of intercurrent bodily diseases in the insane, wards for old and feeble cases, and infectious blocks. The whole buildings have been suitably furnished and are well adapted for their purpose. The lighting throughout is electric, the heating is by radiators, and the water supply is from the Glasgow mains. The asylum is situated about seven miles from Glasgow, on an estate of 400 acres, and is built in the Francois Premier style of architecture from the plans of Messrs. Thomson and Sandilands, of Glasgow. The total cost will not fall much short of £200,000.

DUMFRIES ROYAL ASYLUM.

A new Act of Parliament has been obtained for the Crichton Royal Institution, Dumfries, which supersedes the original Act of 1840. The principal changes introduced are, that instead of three testamentary trustees, as provided by the old Act, who held office for life, and named their successors in their wills, there are substituted the Chairmen of the County Councils of Dumfries, Kirkcudbright, and Wigtown, and instead of certain testamentary trustees, who were the Duke of Buccleuch, the Duke of Hamilton, the Earl of Galloway, the Member of Parliament, the Lord Lieutenant and the Sheriff of the County of Dumfries, and the Minister of the Parish, there are substituted certain members nominated by public bodies, viz., the three above named County Councils, the Town Council of Dumfries, and the District Lunacy Board. It is not anticipated that this change

n the constitution of the Board will at all affect the institution in its management, which is now placed on a more representative basis. The District Lunacy Board have nominated their representative, who has already been a member of the Asylum Directorate for years.

THE CAIRO ASYLUM.

Lord Cromer reports most favourably on the work of Dr. Warnock in the *Egyptian Gazette* of 15th January last. He writes that: "While it is true that certain of the most terrible faults in administration were abolished in the first years of the British occupation, it is only within the last two years that a serious effort has been made to introduce scientific methods of treatment. Great alterations have been made on the buildings, mechanical restraint has been abolished, the mortality has been lessened, and a great number of patients are usefully employed. Lord Cromer concludes by hoping that the two years' engagement of Dr. Warnock will be made permanent; for without European control there would certainly be a return to the evils of the past.

DR. BODINGTON.

The following cutting from *The Province*, published in Victoria, British Columbia, will be of interest to many of the members of our Association:—

"The Provincial Secretary's 'Bill to amend the Lunacy Act' was introduced to the House (not before it was wanted) on Wednesday last, and read a first time. We trust that provisions have been made to render impossible any recurrence of the sad circumstances attendant upon the care of the insane which we recently had occasion to deplore, and that common humanity will compel members to take the keenest possible interest in every clause of the enactment. Reform has been the order of the day at the Westminster Asylum ever since Dr. Bodington took charge two years ago—another appointment, by the way, upon which it is only just to congratulate the Government. We predicted that Dr. Bodington would prove a success, and we are glad to hear on excellent and altogether unbiassed authority that the asylum may now be considered in every way a credit to the country. Perfect discipline is maintained amongst the patients without any necessity for that 'restraint' which formed so barbarous a characteristic of the ancient régime. More satisfactory still is the knowledge that marked improvement has become noticeable amongst cases formerly rated hopeless or incurable."

CORRESPONDENCE.

From DR. FREDERICK PETERSON.

My attention has lately been called to a paper by Dr. Walter Channing entitled "The Significance of Palatal Deformities in Idiots," published in your Journal for January, 1897.

As the author takes issue on several points with many who have investigated the subject of deformities of the hard palate, I trust you will allow me a brief space in your columns to indicate errors into which Dr. Channing has fallen, errors which in my opinion render his results and conclusions entirely valueless as far as they bear upon the subject of true palatal deformities.

The key-stone in the structure of error which he has raised is the confusion that exists, especially in dental literature, regarding the signification of the words "palatal arch." Some dentists imply by this the horizontal arch made by the upper row of teeth, with the apex forward. I believe few if any medical writers consider this a palatal arch. The hard palate forming the arched roof of the mouth is in the minds of most of them the palatal arch.

Dr. Channing's study and his classification relate entirely to the dental or alveolar arch, and therefore are not to be looked upon as contravening in any way the work of Clouston, Lombroso, and others whom he quotes in his paper.

He quotes a classification of abnormal hard palates made by myself in a paper on "*The Hard Palate in Degenerates*" under the impression that mine was a classification of the shapes of the dental arch. He gives a classification of his own of the shapes of the dental arch, but calls it "a classification of the *palates* of pathological individuals" (italics mine).

I feel especially called upon to point out his error, not alone because of misconceptions which must arise on reading his paper, but because the error was called to his attention by me seven months before the paper was printed, and there would seem to be no excuse for not making the standpoint from which he studied the subject more clear in the paper.

The paper was read before the American Medico-Psychological Association in May, 1896. An abstract of it with the discussion is published in the Transactions of that body. I took part in this discussion, and my remarks at the time were as follows:—

"I think there must be a good deal of confusion as to what is meant by the hard palate. I may be wrong in this matter, but I have taken the view that the hard palate is composed of the palatal bones and the palatal portions of the superior maxillary bones. As far as I can learn, Dr. Channing calls the hard palate the teeth and alveolar processes. In describing the arch he always means the dental arch, and not the arch of the palate. . . . If you examine Dr. Channing's casts of the hard palates of normal and of idiotic children, you will observe great differences in the palatal arch, very marked deformities in many of his idiots. If you look at the dental arch only, as Dr. Channing has done, I agree with him that there are no particular differences."

Despite the criticisms thus made, the paper was read before the Medico-Psychological Association of Great Britain two months later and printed in your Journal seven months afterwards.

In the conclusions, therefore, of Dr. Channing's paper we should translate the word "palate" by "dental arch" whenever the word occurs. The following are his conclusions:—

1. Two-fifths of the palates of idiots are of fairly good shape.
2. Palates of normal individuals may be deformed.
3. In the idiot it is a difference in degree and not in kind.
4. In either case it shows irregular development anatomically.
5. Palates of average children and idiots under eight years of age probably do not in the majority of cases markedly differ.
6. There is no form of palate peculiar to idiocy.
7. The statement that a V-shaped or other variety of palate is a "stigma of degeneracy" remains to be proved.

Thus interpreted, and such must be the interpretation of any careful reader of the paper, there can be no differences of opinion between himself and others, for he has made one of the pioneer studies in a new field of investigation, and I do not know of anyone able to controvert his conclusions.

OBITUARY.

Charles Lockhart Robertson, M.D.Cantab., F.R.C.P.Lond. and Ed.

We regret to record the death of this distinguished member of our specialty, which occurred on the 18th May at Exmouth.

On the occasion of Dr. Robertson's retirement from his appointment as Lord Chancellor's Visitor, a very full account of his life work and of his connection with the Medico-Psychological Association was published in this Journal, of which we give a condensed sketch.

Dr. Robertson's medical career commenced by studentship both in Edinburgh

and St. Andrew's, and on becoming qualified he entered the Army Medical Service, which led to his becoming Assistant Surgeon to the Yarmouth Army Lunatic Asylum, and after holding this post for some years he resumed his medical studies at Cambridge.

Taking his degree in this University he, for a short time, entered on consulting practice in London, but soon abandoned this in favour of our specialty and became Superintendent of the Sussex County Asylum. From this post he was advanced to that of Lord Chancellor's Visitor, which office he held until quite recently.

Dr. Lockhart Robertson's association with the Medico-Psychological Association has been both intimate, prolonged, and distinguished. He must ever rank amongst those who materially contributed to its success, when yet in its earliest childhood. From 1855 to 1862 he acted as General Secretary, a period in which the Association strengthened very considerably.

From 1862 to 1870 he became Editor, in conjunction with Dr. Mandaley, taking the place of Dr. Bucknill, who resigned in 1862, and in 1867 he became President. His interest in the Association has been manifested in many ways up to the latest period of his active professional life, and on resigning his post quite recently he made a very handsome donation of books to the Asylum Library.

On the occasion of the meeting of the International Congress in London, Dr. Robertson was selected as the President of the Medico-Psychological Section, a post he filled both with dignity and ability. His presidential address on that occasion dealt with the position of lunacy at that date and in every way justified his character as a man of clear views and foresight, with a cultured power of expression.

His personality, too, well fitted him for the post of honour he then held, as well in appearance as in manners, tact, and linguistic knowledge.

Dr. Robertson's strictly professional reputation will rest more on his great ability as an administrator than as a writer. Under his charge the Sussex Asylum obtained a distinct reputation for its successful administration, and was undoubtedly in the first rank of English Asylums.

His literary contributions were numerous and principally devoted to practical administrative matters. His name will probably be best known in this aspect from the translation of Griesinger's work on Mental Disease for the Sydenham Society in conjunction with Dr. Rutherford.

Dr. Robertson married quite late in life the daughter of Colonel Rochfort. For many years he suffered much from ill health and was from time to time constrained to take periods of rest from work, and this probably helped to limit the literary output which might have been expected from such an active-minded, experienced and cultured man.

A large number of the members of this Association who knew him during the more active portion of his career will deeply regret his loss, and those to whom he was less intimately known must regret the loss of one who had been so long and actively connected with the Association.

THE LATE DR. O. LOCKHART ROBERTSON: A REMINISCENCE.

It was in the summer of 1859 that the writer, then a candidate for the Chaplaincy of the Sussex Asylum, Haywards Heath, first made the acquaintance of Dr. Lockhart Robertson, who had recently been appointed Superintendent. In a few characteristic words he introduced himself, conveying the impression that he already felt himself in authority. His decisive manner and the keen glance of his eye intimated his capacity for government. Rule he did, and his strong will made itself felt not only in the wards and household, but also in the committee-room. The asylum, then newly constructed, had not received its first patients when Dr. Robertson made himself known to the future Chaplain. "It is easier," says the proverb, "to walk on the road than to make the road." And the Superintendent had to *make* the road; and this he did so successfully that many travelled

along the iron way of the L.B. and S.O.R. to visit an asylum which gradually acquired a distinct reputation. No doubt he was ably seconded. Mr. Mortlock, whose valuable services are still at the disposal of that asylum, was Clerk and Steward; Mr. Knox—a shrewd Scotchman—was over the male staff; and Miss Buckle, almost from the commencement, had the management—which she continues to undertake—of the nurses. Of the assistant medical staff the writer would make mention of one to whom he was much attached, and who was suddenly cut off at his work in the asylum—Dr. W. Valentine Brown—a tablet to whose memory was placed in the chapel.

It, perhaps, seemed that one principle of Dr. Robertson's management was that of the saying that the "Master's eye is worth more than both his hands." Personally he was not very much in the wards, his visits being occasional and irregular, but the establishment was maintained in good order; and even when absent, the telegraph, it has been said, conveyed his instructions. Year after year the Commissioners in their Report expressed their high approbation of the results of the doctor's administration. He was a man of considerable ability. He graduated at a later age than is usual at Caius Coll., Camb., at the time, if rightly remembered, when Mr. Mackenzie, 2nd Wrangler, was tutor. His knowledge of foreign languages was no doubt useful to him, both as Editor of the *Journal* and in his communication with foreign alienists and others. His remarks were somewhat caustic at times, and inclined to be aggressive; and if it is not presumptuous to hazard an opinion in his speciality, he was progressive in ideas and treatment.

The writer may be permitted to add a few words in reference to Dr. Robertson's early association with the "Association for the After-Care of Poor Persons discharged Recovered from Asylums for the Insane." On the occasion of a drive to Southgate in the spring of 1879 the subject was discussed. It met with his approval. Subsequently a letter was received by him in which he wrote:—"Dr. Bucknill will gladly aid your scheme, and places his drawing-room, 39, Wimpole Street, at your disposal for, say, 4th or 5th June." On the latter day a meeting was held. There were present Dr. and Mrs. Bucknill, Miss Cons, Dr. D. Hack Tuke, Dr. Lockhart Robertson, Mr. W. G. Marshall (then one of the Superintendents of the Colney Hatch Asylum), Dr. Harrington Tuke, etc. A paper, printed in the October number of the *Journal of Mental Science*, was read by Rev. H. Hawkins. It was moved by Dr. Lockhart Robertson, and seconded by Dr. Hack Tuke, "That this meeting do form itself into an Association." The names of Dr. S. Duckworth Williams and of Dr. Savage were, at Dr. Robertson's request, added. It was moved by Dr. Robertson, and seconded by Mr. W. G. Marshall, "That Dr. Bucknill be invited to take the office of President." In the autumn of the same year Dr. Robertson attended another meeting at the same trust; and he was again present and spoke, at a gathering in 1881 in the house of Dr. Andrew Clark, when the Earl of Shaftesbury (President) was in the chair, and among others, Lady Frederick Cavendish and Mrs. Gladstone were present. Dr. Robertson's official duties prevented him from attending the meetings of the Association in after years, but he recently became one of its Vice-Presidents, which office he held at the time of his death. The Association is much indebted to him for his valuable aid at the outset of its career, as it is also to the late Dr. Hack Tuke for his strenuous and influential support. Dr. Savage, also, has been its friend from the commencement; and the kind offices of Dr. Rayner, the present Chairman, call for respectful acknowledgment.

HENRY HAWKINS.

THE HACK TUKE MEMORIAL.

At a meeting the Executive Committee of this fund it was finally decided to hand over this fund to the Medico-Psychological Association, to be held in trust; the interest to be applied to the purposes of the Library of the Association, which it may be hoped will be known as the Hack Tuke Library. By a liberal donation from Mrs. Tuke, the fund will amount to three hundred and fifty pounds.

NOTICE BY LIBRARIAN.

Dr. Cecil Beadles, of Colney Hatch, has kindly contributed No. 113 of the *Journal of Mental Science*.

NOTICES BY THE REGISTRAR.

Examination for the Certificate of Proficiency in Mental Nursing.

582 candidates applied for admission to the May examination for this certificate. Of this number 472 were successful, 51 failed to satisfy the examiners, 21 withdrew, and the result of the examination of 38 candidates has not yet come to hand.

The following is a list of the successful candidates :—

Middlesex County Asylum, Wandsworth.—*Males* : William Joseph Adam, Robert Barlow, John Broadway, Charles Henry Godfrey, James Hurst, Joseph Ibbott, Thomas Edward Ladd, George Oulds, Albert Paice, Wallace Wreford. *Females* : Rose Byrne, Pauline Brown, Lily Harriss, Jessie Lane, Chase Rolfe, Ellen Stock, Ada Warren.

Hants County Asylum, Fareham.—*Males* : Harry Moss, John New, Richard Shawyer. *Females* : Elizabeth Edwards, Amelia Earley, Mary Faulkner, Edith Gisborne, Elizabeth Miles, Elizabeth Mary Oates, Fanny Oates, Ellen C. Stevenson.

London County Asylum, Cane Hill.—*Males* : William Anscombe, Robert Dunkeld, William Edwards, Frederick George Greenslade, George Hinton, Harry Edgar Hambrook, John Richard Hill, Edward Alfred Hall, Archibald Harris, Arthur Wm. Izzard, William Bright Jones, James Macdonald, George Mackinnon, James Inwood Payne, Thomas Parsons, Arthur Russell, David Ryall, Alfred Stickley, John Ramsay Shannon, Herbert George Spinner, Harry Toft, George William Taylor, William Holman Vincent, Frederick Windebank, John Watson, Guy Wood. *Females* : Agnes Dudley, Mary Frances Flood, Harriette E. Groves, Helen Henderson, Amelia Baird Hogg, Marion Mitchell, Louisa Alice Jordan, Millie Robins Pacey, Alice Richardson, Annie Randall.

Lancashire County Asylum, Rainhill.—*Males* : Fred. Collins, Alexander Corbett, Frederick Wm. Divelly, William Goodchild, James Bracken Leighton, Thomas Maxwell, Alexander McKenzie, Richard Schofield, Samuel Sobee, John Henry Wilson. *Females* : Anastasia Coghlan, Mary Elizabeth K. Cahillin, Sarah Agnes Dovey, Alice Maud Hardwick, Jennie Rennie, Ellen Smith, Beatrice E. Smith.

Glamorgan County Asylum, Bridgend.—*Males* : John Bevan, George James, Francis Wm. James, Thomas George James, David Jenkins, Thomas Lewis, Albert Missenden, John Morris, John Rice, Thomas John Richards, Thomas Thomas, Lewis Thomas, Francis Williams, Alfred Alexander Watts. *Females* : Martha Allen, Sarah Ann Belcher, Jessie A. Conibear, Letitia Davies, Ann Davies, Ellen Rose Davies, Lizzie Frances Faviell, Margaret Griffiths, Maud Jones, Cecilia Jones, Susie Ellen Jollow, Catherine Alice Jenkins, Elizabeth Jukes, Elisabeth Turner, Hannah Thomas, Margaret Williams.

Monmouthshire Asylum, Abergavenny.—*Males* : Christopher John Brown, Alexander Boag, Charles Good, Frederick Hinksman, William Hardwick, Thomas Lewis, Thomas Edward Littler, Joseph Taylor Neale, George Price, Charles Powell, Walter Parry, Charles Webb. *Females* : Jessie Gough, Sophia Jones, Eliza Mills, Florence Annie Rowlands, Mary Anne Woods.

West Riding Asylum, Menston.—*Males* : John Repton Cope, Robert Hardy, Thomas Jolly, Hugh McClymont, Arthur Parkinson, Harry G. Smith, John Arthur Russell, Richard Tommonny. *Females* : Melenah Lee, Mary Ann Roo.

West Riding Asylum, Wadsley.—*Females* : Annie Eliza Broadhead, Edith Charlesworth, Emily Jane Davies, Sarah Annie Green, Rachel Griffiths, Alice Moore, Emily Rose Ann Reed, Lillie Swann, Mabel Scales, Mary Todd.

Oxford County Asylum.—*Males*: Alfred James Douglas, William A. F. Godden, Francis Chas. Mayhew, Gilbert Muston.

Nottingham County Asylum.—*Males*: Thomas Bateman, Joseph H. Duke, Walter Meakins, William Newton, Charles Oscroft, Arthur Edward Rockley, George Ward, Frederick Wildbore. *Females*: Edith Ada Barnes, Kate Forman, Martha Wilson.

Surrey County Asylum, Brookwood.—*Males*: James Nelson Cobbett, George Carpenter, John Augustus Mitchell, William Pook, Eli West. *Females*: Alice Maud Beesley, Margaret Conery, Maud Evelyn Elliott, Emma Collard, Phoebe Head, Emilie Margaret King, Lydia Mary Lodder, Rosanna Sparkes, Mary Jane Tanner, Florence May Webster, Lydia Warbrick.

London County Asylum, Claybury.—*Males*: Charles Fredk. Akerman, William Hy. Berkshire, Alfred Beaven, Benjamin Barnes, Charles Fredk. Browne, John Billings, Robert Bedford, George Blunt, William Henry Barnes, Charles Croft, Joseph Costar, John Campbell, Thomas John Deakin, James Charles English, Thomas Edwards, George Richard Farex, William Feenney, Charles Gumbley, William Holmwood, Thomas Henry Highland, John Cooper Harrison, Philip Hegarty, Frederick Ketcher, Charles Perceval Keenen, John Thomas Leyman, Jesse Mace, Thomas Morris, Albert Fredk. Neal, Arthur Harold Painter, George Willson Pretty, James Purtil, Alfred Ernest Painter, William Rogers, Roger Charles Redfern, William Slater, Thomas Scars, Charles Jos. Stringer, Alfred Scott, Robert Underwood, Charles Wm. Warner, Bernard Wyles, William Henry Wallis, Samuel Woodley, Herbert Wright. *Females*: Florence Arnold, Edith Barry, Elizabeth Batten, Amy Bailey, Catherine Bowen, Lily Chisham, Alice Emily Charles, Esther Josephine Channorce, Louisa Collyer, Sarah Cottis, Amelia Carter, Albertha Dart, Zellah Dawson, Phyllis Ada Elliott, Louise Eldred, Emily Alice Field, Georgina Kate Mary Gregory, Emily Gill, Mary Grime, Emily Gray, Ellen Emily Harris, Rose Howard, Kate Hegarty, Jenny Dorothy Jones, Ellen Adelaide Minchington, Frances Metcalfe, Minnie Mallett, Florence Meddoms, Bessie Moore, Cecilia Morgan, Edith Isabel Annie Ponting, Isabel Riley, Margaret Russell, Annie Sandever, Annie Symonds, Elizabeth Emma Siddle, Thirza Skinner, Ethel Georgina Taylor, Alice Whiffin, Edith Whitfield, Lizzie Martin Williams.

County Asylum, Stafford.—*Males*: Henry J. Birch, Mark Guest, Edward Tallent, James Williams.

Kent County Asylum, Chartham.—*Males*: Arthur W. Gutteridge, Albert Edward Griffin. *Females*: Catherine Ennis, Kate MacMahon, Harriet Farrow, Bessie Stott, Mary Simmonds.

Durham County Asylum.—*Males*: William Fenner Bacon, Joseph Hemingway, Frederick William Hooper, John Thomas Hoggett, Arthur Jagger, William Andrew Laverick. Thomas O'Neill, Willie Parker, Robinson Stamper, Charles Willie Shore, Edward Wood. *Females*: Mabel Bee, Nellie Bowser, Ada Davis Brunt, Harriet Fahy, Amy Hartin, Fanny Heard, Martha E. Hogarth, Alice Beatrice Hutchinson, Mary E. Longstaff, Ada Leaos, Sarah Elizabeth Nichol, Elizabeth Nicholson, Ada James Nisbet, Janet Sutherland, Sarah Ann Titterington, Philiphena Thompson.

West Riding Asylum, Wakefield.—*Females*: Blanche Addy, Annie Allsopp, Annie Whiteley, Clara Carr.

City of London Asylum.—*Males*: Henry James Tibble, William Webb. *Females*: Alice Clark, Elizabeth Anne Edmunds, Grace Diana Jarvis, Rose Harriet McDonald, Annie Roberts.

Bristol City Asylum.—*Males*: Charles Grist, Joseph Neath. *Females*: Florence Beavis, Mary Leahy, Eva Henrietta St. John, Jane Ann Wilson, Annie Williams.

Rubery Hill Asylum.—*Male*: Joseph Lake. *Females*: Minnie Foxall, Jennie Goodwin, Annie Greg, Mary Jane Lake.

Exeter City Asylum.—*Males*: Frank Frost, Leonard John Luscombe, Fredk. William Marks, Charles John Radford Symes. *Females*: Emily Maud Dymont,

Lillian J. Hamilton, Minnie F. Hamilton, Lizzie Musgrove, Thirza Marks, Florence F. Symes, Frances Beatrice Maria Symes.

Borough Asylum, Nottingham.—*Males*: John Irvine, James William Spencer.

Broadmoor Asylum.—*Males*: John Goddard, George Slyfield, Henry Slyfield, Charles Wm. Spanholts. *Females*: Catherine Emma Blake, Isabella Mackay.

The Retreat, York.—*Male*: Joseph Bevers. *Females*: Annie Boyes, Mary Cooper.

St. Luke's Hospital, London.—*Females*: Gertrude Amy Hanbury, Florence Izard.

Bethlem Hospital, London.—*Males*: William George Bundell, John Thomas Goddard. *Females*: Thirza Dimond, Bertha Eady, Mary Hannah Gilmour, Amy Humphries, Charlotte Heugh, Dora Langley, Hannah Brinsley Ramsay, Alice Maud Mary Smith.

Holloway Sanatorium.—*Males*: Henry Herbert Maddock, William Angus Richie, Frederick Conrad Winslow, Robert William Welsh. *Females*: Alice Bradford, Florence Annie Goodall, Catherine Hipwell, Agnes Flora Tennant.

Camberwell House Asylum, London.—*Females*: Amelia S. Cox, Bessie M. Cann, Frances Mary D'Aeth, Mary Gray, Annie Hammant, Evelyn Ellen Sear, Emily Terry.

Warneford Asylum.—*Male*: Frederick Grant. *Female*: Julia Hall.

Bethnal House, London, E.—*Females*: Ellen Wells, Ada Cobb.

Royal Asylum, Edinburgh.—*Male*: Alexander Mackay. *Females*: Georgina S. Banks, Annie Sophia Bähr, Jessie Morrison Cook, Elizabeth Duncan, Annie Fraser, Fanny Gunn, Annie Gall, Mary A. Hughes, Elizabeth McGrigor Robertson.

Royal Asylum, Gartnavel, Glasgow.—*Males*: John Burgess, John Chisholm, Kenneth Mackay, George McKenzie, Hugh Ross. *Females*: Herkis Margaret Darney, Mary Hughes, Christina Mackay.

James Murray's Royal Asylum, Perth.—*Females*: Barbara Cruickshank, Anne Darlington, Harriet Taylor.

Royal Asylum, Aberdeen.—*Males*: William Cameron, James Hall, Robert King, William Murray. *Females*: Maggie Burnett, Annie Donald, Jane Mitchell McDonald, Agnes Mitchell, Jessie Ritchie, Agnes Stephen.

Dundee Royal Asylum.—*Females*: Charlotte Samson, Isabella McKenzie.

Crichton Royal Institution.—*Females*: Jane Grimm, Kate Maclean, Catherine McLean, Margaret Winton.

District Asylum, Cupar.—*Males*: William McCara, William Wishart. *Females*: Mary Ann Christie, Bella Christie, Helen Vallance Miller, Mary Wallace.

Bosburgh District Asylum, Melrose.—*Male*: James Herd. *Females*: Helen W. Douglas, Lizzie Outhwaite.

Perth District Asylum, Murthly.—*Males*: James Johnstone, John C. Myers. *Females*: Jane Adam, Bella Nicol.

Woodilee Asylum, Lenzie.—*Male*: William Strathdee. *Females*: Elizabeth Chalmers, Jessie Milne, Annie McLaren, Elizabeth Reid.

District Asylum, Inverness.—*Males*: Alexander McDonald, Murdo McKenzie, James Neill, Charles Singer. *Females*: Jannet Hume Drummond, Phoebe Gass McGown, Janet D. Smith, Grace Mary Stewart.

Paisley Parochial Asylum, Riccarton.—*Male*: Torquil McAulay.

Donagall District Asylum, Letterkenny.—*Males*: Robt. McMorris Allison, James Black, Hugh Cullen, John Crossan, William John Ewing, John Gallagher, George Gallagher, James John Kerr, John Lyons, Matthew Moore, Daniel McMenamin, Joseph Moore, John McClure, Charles McGinley, Thomas Wilkin.

District Asylum, Clonmel.—*Males*: Alfred Dempsey, Thomas Guiry, Michael Gorman, Albert Sugg, William Waters, Philip Wall. *Females*: Mary Hanrahan, Kate Leary, Johanna Lonergan, Bridget Mahony.

District Asylum, Cork.—*Males*: John Desmond, Michael Lynch, Hugh Ryan, Thomas Sexton.

District Asylum, Londonderry.—Female: Bessie Green.

The following is a list of the written questions:—1. What bones form the elbow joint? 2. What is a "Voluntary" muscle? Describe its structure and function, and give an example. 3. State the names and relative positions of the larger organs contained in the Cavities of the Thorax and Abdomen. 4. What are the functions of (a) Motor and (b) Sensory nerves? 5. A patient has cut his wrist severely. What measures would you employ to stop the bleeding, and what would be your first step? 6. In what form of insanity does refusal of food generally appear as a symptom? 7. What are the special precautions to be taken in a case of General Paralysis? 8. To prevent accidents what rules should be followed in the bathing of patients? 9. What precautions should an Attendant take on being sent to have charge of a patient in a private house? 10. On what points should an Attendant in charge be prepared to make a daily report regarding a patient's progress?

The next examination will be held on Monday, the 1st day of November, 1897, and candidates are earnestly requested to send in their schedules duly filled up to the Registrar of the Association not later than Monday, the 4th day of October, 1897, as this is the last day upon which, under the rules, applications for examination can be received.

Examination for the Certificate in Psychological Medicine.

The next examination will be held on Thursday the 15th day of July, 1897, at 10 a.m., in London at Bethlem Hospital; in Edinburgh at the Royal Asylum, Morningside; in Glasgow at the Royal Asylum, Gartnavel; in Aberdeen at the Royal Asylum; and in Dublin at the Richmond Asylum.

The Gaskell Prize.

The examination for the Gaskell Prize will take place at the Bethlem Hospital, London, on Friday, July 16th, 1897, at 10 a.m.

Applications for admission to these examinations should be sent not later than Thursday, July 8th, 1897, to the Registrar of the Association.

For further particulars respecting the various examinations of the Association apply to the Registrar, Dr. Spence, Burntwood Asylum, near Lichfield.

NOTICES OF MEETINGS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

Annual Meeting.—The Annual Meeting will be held in the College of Medicine, Newcastle-on-Tyne, on 29th and 30th July, 1897. There will probably be Excursions on the 31st July.

South-Western Division.—The Autumn Meeting will be held at Brialington House, Bristol, on Tuesday, 26th October, 1897.

Scottish Division.—The Autumn Meeting will be held as usual on the second Thursday of November.

APPOINTMENTS.

HAYLOCK, JOHN G., M.D. Edin., appointed Physician-Superintendent to the Royal Asylum, Sunnyside, Montrose.

HOWDEN, JAMES C., M.D., appointed Consulting Physician to the Royal Asylum, Sunnyside, Montrose.

SKINNER, W. A., M.B., C.M. Edin., appointed Junior Assistant Medical Officer to the Royal Asylum, Montrose.

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PART I.—ORIGINAL ARTICLES.

The Presidential Address delivered at the Fifty-sixth Annual Meeting of the Medico-Psychological Association held at the University of Durham College of Medicine, Newcastle-on-Tyne, 29th July, 1897. By T. W. McDOWALL, M.D. Edin. et Dunelm.

THE INSANE IN INDIA AND THEIR TREATMENT.

Gentlemen,—Four years ago I had the honour of reading an address at the Psychological Section of the British Medical Association, and was thus afforded an opportunity of expressing some of my views relative to a few of the interesting and important subjects which come under our notice as workers in a special branch of medicine. Some of you may remember that the bulk of it was occupied with a consideration of the influences, real and possible, of the recently created County Councils on Asylums. It was a pleasure to find that my views were supported by the experience of those who listened, and that the unanimous conclusion was that County Asylums, their officers and their inmates, had not suffered in any way by the change in administration, and that there was every reason to expect that our efforts to effect improvements in the construction and administration of our asylums, to afford our patients the advantages of genuine advances in scientific medicine, and to forward our knowledge by the prosecution of original research, would receive the cordial support and approval of our new governors; and that it certainly would be our own fault if any check occurred in the present eminently satisfactory state of affairs. For, as long as we retain the confidence of the public and their representatives by applying our best powers to the discharge of our official work, by exhibiting

a judicious energy in the development of our ideas, and by aiming at a high ideal in our private and official lives, we may rest assured that the future has in store for us nothing but good.

It was my original intention to devote my present address to a consideration of the methods most likely to advance our knowledge of mental disease in its scientific aspects. Accident, however, threw in my way a subject which may be more immediately profitable in practical results; and, being new, it may engage your attention for a short time. And yet I do not like entirely to pass over the subject of scientific work in asylums, than which none more important exists, and about the real achievements of which opinions are so hopelessly divided. As really everything that is good and great in this world had a small and humble origin, and became what it is by the application and devotion of many earnest men, so we may hope that our branch of scientific medicine so recently initiated may yet, though we may not live to see it, yield many blessings to suffering humanity. Personal work as an asylum pathologist in early professional life showed me long ago that in addition to what asylum medical officers may be able to do, it would be necessary to have men devoting their attention entirely to psychological investigation, if satisfactory progress is to be made. The subject is so vast, and the difficulties are so overwhelming, that only at long intervals of time can we expect very brilliant results. To my mind it is quite pathetic to think of the devotion, industry, and self-denial exhibited by the many workers at psychological problems, and then to contemplate the scanty additions to real knowledge. Do not imagine that I am so ungenerous as to belittle the work and achievements of genuine workers; my earnest desire is to see many, even more competent and more enthusiastic, enter the field of research. Therefore one hails the appointment of a pathologist by the London County Council as full of possibilities for good; and the same may be said of a similar office recently created in Scotland. But we must not expect too much; we must not be over sanguine. We, members of the medical profession, see but little of the branches of science which are described as "exact," and are perhaps not very familiar with their methods. What little we happen to know appears so wonderfully and delightfully certain, that we long for the time when similar results will be obtained in the various branches of psychological investigation. The so-

called "laws" in chemistry and physics seem to most of us so clear and beyond question that we are apt to scorn the achievements in our own department. But are these "laws" really beyond question? Are they truths founded on absolute facts? Not at all. Even the Newtonian law of gravitation, believed by all ordinarily educated persons to be absolutely and universally true, is not so by any means. So also in regard to Boyle's law as to the compressibility of gases; it is only true within very narrow limits. And so the list could be continued, but I must content myself by referring you to a really valuable essay by Edward Carpenter, entitled "Modern Science—A Criticism." This paper is of special value to us in that it shows clearly that the commonly received claims of modern science cannot be allowed. No doubt the results of investigation are wonderful enough, especially when applied to modern requirements; and fortunately we can utilise natural phenomena without our having a glimmering of an idea of their real nature. Take such a simple case as the solution of a lump of salt in water. No one has any knowledge of the relation of the two substances when solution occurs. It has taken a hundred years to determine approximately the atomic weight of oxygen; the number, carried out to several decimal places, has the appearance of great exactness, but it is only an appearance. I earnestly refer you to the essay named and the writers mentioned by Carpenter, for their careful study will do much to correct that idolatrous regard for the achievements of modern science, and at the same time teach us humility, industry, patience. I have long resented the loud proclamation of the wonderful results of modern science as illustrated in the treatment of mental diseases. It would be well for us and our patients were these wild boastings true. My firm opinion is that they have a most injurious effect by retarding the prosecution of genuine scientific work. They do this by developing the spirit of undue scepticism in asylum physicians. As each reported discovery is announced it is hailed with delight, and then put to the test of extended and critical observation. What the results have mostly been we all know too well. As we go our daily round and study the wonders ever under the eyes of the asylum physician, how ignorant we feel, how helpless to do good by means of the so-called scientific methods, how disappointed at the results of some new line of treatment reported to have been so successful elsewhere. These are

amongst our most miserable experiences, and thus we come in time to place no reliance on reported discoveries, be they in pathology or therapeutics; and in our disappointment we are apt to run to the extreme of renouncing belief in any kind of scientific work. Still we should remember that whilst few men are mentally qualified to do high-class original work, especially in psychological medicine—the highest of all branches in our profession—and that if most of us do not possess the technical knowledge and necessary training which go to constitute the successful original worker, we can yet do much good to our fellow men by diverting our energies in other and more humble practical directions. This naturally leads me to the real subject of my address; for however much we may be accused of apathy in scientific investigation our bitterest critics must admit that our philanthropic efforts on behalf of the insane have borne much good fruit. Whilst at home and in our colonies the treatment of the insane leaves, on the whole, not much that can be considered bad, and what is evil is a steadily diminishing quantity, there yet remains a large portion of the British Empire in which asylums are but little known, and where a population of hundreds of millions is most inadequately provided with assistance for the care of the insane. I refer to India, the greatest of our many noble possessions, in many respects a miracle of successful official administration, and yet lamentably behind as to provision for the care of the mentally afflicted. A very brief paragraph in one of our medical journals first brought the subject under my notice, and since then I have made such enquiry as has been in my power, though it has been impossible for me to proceed to India, and thus to examine for myself the real state of affairs. My correspondence has been very extensive, but positive information has not been in proportion; indeed, except from official documents and a few letters it has been almost impossible to learn anything.

Missionaries, male and female, officers in various branches of the Government service, and many others have been applied to, but with very little result.

Before entering on the consideration of the insane and the administration of asylums in India, perhaps I may be allowed to mention a few figures by which it may be possible to convey some idea of the magnitude of the subject and to bring before the mind some conception of the immense territory included under the term "India,"

and the teeming millions, mostly fellow subjects, who inhabit that most interesting region. The total area may be taken to be 17,000,000 square miles, of which 750,000 are under Native, and the remainder under British administration. In other words, it is as large as Europe, excluding Russia. The population shown by the Census of 1891 was, roughly, 288,000,000; of which 66,750,000 belonged to Native States. Allowing for increase of population since that date the total will be at least 304,000,000. Three-fifths of this great Empire are under the direct rule of the British Government, which is responsible for all branches of administration, including, of course, the care of the insane. The remaining two-fifths are made up of a large number of Native States, whose rulers acknowledge the suzerainty of Her Imperial Majesty, but which, in matters of internal administration, are independent to a greater or less extent.

There is some risk of smothering the interest of a subject in a mass of statistics, and therefore I omit much which caused trouble to collect, and simply state the following in order to bring out an important fact. The last report of the Lunacy Commissioners for England and Wales gives the ratio of three lunatics to every 1,000 of the population. What are the figures for India? With its 304,000,000 of people it has under official care only 4,311; that is a proportion of 1 insane person to 70,000. Only one question can be asked in such circumstances. Where are the others? That there are many others is beyond a doubt. Many wander about the country, kindly treated, it is believed, by the people, who view them as beings specially under the care of Heaven, and willing to share with them their sometimes rather scanty meals. Indian folk-lore makes repeated references to lunatics and imbeciles; and stories written by English people in India contain occasional notices of them. Thus a pathetic tale by Mrs. F. A. Steel introduces an imbecile who plays an important part in the story, and perhaps I may be permitted to reproduce a paragraph or two, as they well illustrate the indifference with which the mentally afflicted are viewed in India, and at the same time the kind and sympathetic manner in which they seem to be treated.

“He had no name. The village folk, it is true, called him Baba; but so they called all such as he. Nor did he ever show that he identified the word as anything more

personal than the rest of the strange sounds to which he listened serenely, as if he had no part or lot in them. Perhaps he was deaf, perhaps he was dumb; perhaps he was neither. Nobody knew, nor for the matter of that cared. He was one of Shah Sujah's mice; no more, no less. In that lay the difference between him and other men. A small difference in some ways, in other illimitable. To the level of the brows as fine a young fellow as you could meet, of middle height, with clean, straight limbs. Above that nothing—nothing but a skull narrowed to the contour of a new-born babe's, conical, repulsive, like a rat's. Hence the name Shah Sujah's mouse.

"The learned among us call such poor creatures microcephalous, and talk glibly of joined sutures and osseous formation. The natives of upper India have a different theory. These mouselike ones belong to Shah Sujah's shrine, because they are the firstlings of barren women made fruitful by the Saint's intercession. Therefore, from their birth they bear the token of the mother's vow, dedicating them to his service. The seal is set on them from the beginning in mute witness of the truth.

"Whatever the truth may be, whether, as some say, the new-born babes brought to be reared, like Samuel in the temple, are born like other babies, and the typical distortion produced by slow pressure—as in lesser degree the coveted bomb-like foreheads of the Sindhi women are produced; or whether, as others hold, a tradition favourable to the wealth of this shrine is kept up, and additional gain assured by the secret exchange, through agents all over India, of the normal babies for that percentage of microcephalous infants which nature makes—this much is certain: all children dedicated to Shah Sujah are his mice. There are hundreds of them growing up at the shrine, dying there, and during the cold months spreading over the length and breadth of India, begging with unvarying success of all women, fruitful and unfruitful; living meanwhile on the broken food given them, but hoarding the money with an odd unconsciousness of all, save that in some mysterious way it belongs to the saint; then, as the heat returns, wandering back like a homing pigeon to the insignificant shrine at Gujrât, which means so much to so many," and so on. These extracts give a human interest to our subject, but we must proceed to the consideration of topics not quite so elegantly expressed.

A careful perusal of official records leaves a strong impression on the mind that in India, as elsewhere, the lunatic is the last person provided for and considerably treated by the Government. In the Protected or Native States it could scarcely be expected that anything had been done to provide them with shelter or to relieve their sufferings. According to the religious views of the population lunatics are specially favoured of God or possessed by devils—in any case to be avoided and left alone, if at all possible. These States have a population of 75,000,000; vary in size from a country as large as Italy, down to a mere patch; have been in more or less intimate association with western civilisation for many years, and yet there is only one asylum, and this owes its existence to direct British administration. At one time, not so very long ago, for political reasons, Mysore had to be absorbed into the general administration, and one of the results was the establishment of an asylum. When the political reasons disappeared the Government of the State was handed back to the Native Ruler, and thus it has the distinction of being the only Native State with an asylum. In his quinquennial report the Political Agent makes a very brief reference to it. It is situate at Bangalore, and is a small institution. The number resident at the end of 1890 was 189; of these 26·6 per cent. were women. It is reported that a large percentage of those admitted were in very bad general health because of neglect or mismanagement, or both. The usual fortnightly amusements and refreshments were continued, and the majority of the inmates enjoyed them much, and were believed to have been benefited thereby. Work as a means of treatment was not neglected. Of criminal lunatics 24 were admitted during five years. They are dressed differently from the other lunatics, but in other respects they are treated in the same way, and their behaviour and condition are about the same.

These few lines contain nearly all official information to be obtained about the insane in Mysore during five years; not only that, it is the total information as to the insane in the whole of the native States with their 75,000,000 inhabitants. A gentleman who was for long political agent at the court of one of the native rulers assured me that in that State there were plenty of lunatics, male and female, some of them very troublesome. Not unfrequently the authorities took a specially dangerous case to the frontier, and drove him across to the charge of the police who were there ready

to receive him, having got previous notice. Occasionally the State forwarded a lunatic to an asylum under the Indian Government, and paid the cost of maintenance, but this was most unusual.

Let us now turn to the territory under the direct administration of the Government of India. In justice to the rulers of that immense region with its 230,000,000 of people, it must be said that some effort has been made to provide for the insane, but it is not evident that these efforts have been energetic, or that the natives have shown much alacrity to avail themselves to any extent of asylum treatment for the insane.

The following table presents, in a condensed form, information of the highest importance :—

Government.	No. of Asylums.	Patients in Asylums at end of 1895.			Number of Criminals included in the figures.		
		M.	F.	Total.	M.	F.	Total.
Madras	3	475	148	623	142	18	160
Bombay	6	566	141	707	91	10	101
Burmah	1	223	30	253	79	5	84
Central Provinces	2	245	69	314	84	8	92
Punjab	2	269	73	342	71	4	75
Bengal	5	726	127	923	408	55	463
Assam	1	83	22	105	18	1	19
North-Western Provinces and Oudh	4	850(?)	194(?)	1044(?)	142(?)	18(?)	160(?)
	24	3437	874	4311	1035	119	1154

These figures cannot fail to arrest attention. It would appear that in India only one person in 53,000 is confined in an asylum. Estimating the sexes as equal in number, we have 1 man in every 33,460 and 1 woman in every 131,578 detained as a lunatic. Even more striking is the fact that of the 4,311 persons in asylums 1,154 are criminal lunatics. These statistics suggest the opinion that lunatics are not sent to asylums, as a rule, until they have become an unbearable nuisance, or have attracted the attention of the authorities, and are on the point of falling into the hands of

the criminal department. It cannot be supposed that more than a mere fraction of existing lunatics come under official notice, but it would be unjust to conclude that indifference and neglect alone account for the present unsatisfactory state of matters. It is impossible for us fully to comprehend the tyranny of caste requirements and religious duties in India. Besides, in the East women are of small moment, and very few men would dream of being at any expense for the sake of an insane wife or sister. A powerful circumstance contributing to the almost total neglect of insane women is the requirements of "purdah." Amongst all the better class, for a woman to be seen by forbidden eyes means not only shameful degradation in this world but complete destruction in the next. In Britain, where political opinions so often embitter social relations, and religious differences go far to turn men into devils, we cannot conceive of anything like the violence of the horror produced and the extremity of revenge excited by real or supposed violation of caste and religious requirements among Indian natives. Thus in many ways there is a great gulf fixed between Indian and British races; yet one is very much at a loss to understand the circumstances which have contributed to the almost complete ignorance exhibited by English residents in India as to the internal and domestic lives of the natives. Especially is this true regarding the insane. Whilst most of my correspondents state that lunatics in India are very rare, others strongly insist that there are crowds of them, and that they are got rid of in a variety of objectionable ways. In the native States, where there is no European control and supervision of internal affairs, anything can be done and no enquiries may be made. Death by poison, starvation, snake bite, drowning, and so on, can be attributed to suicide or some form of accident, and no trouble may be taken to discover the true cause. Yet a pretence might be made that some care was taken of lunatics, and it would be quite in keeping with the internal mismanagement of some of these native States that, on a philanthropic visitor asking to see the asylum or other building where the lunatics are detained, he would be shown a lot of miserable creatures, sane and insane, captured for the occasion and thrust into a room in the gaol, but at once let loose whenever the back of the visitor was turned.

My rather extensive correspondence with missionary and other societies belonging to various religious bodies disclosed

the remarkable fact that the condition of the insane had never been brought under their notice by any of their agents. Communications from missionaries, male and female, contained next to nothing in the shape of definite information or indications of interest. From a few letters I may be allowed to make the following brief extracts—they represent all worth attention. A medical missionary long resident in Rajputana, writes:—"I have met several insane (women) during my work. They have been of the type called 'silly,' and are allowed the amount of freedom that we accord to children and such cases. Practically nothing special is done for them. They wander about at liberty. I sometimes come across them in a frenzy, shouting and gesticulating in the public streets; the public protects itself from such should occasion show itself. I have not heard of them committing any desperate crimes, and the community seems to adapt itself to their presence with a word of pity and the expression that it is their fate. There may be, and I think there are, one or two institutions in the larger presidency towns, but under the existing conditions of life in India such folks can go about with more safety to themselves and neighbours than in our island. Insane men and women have the same treatment—wandering about in an aimless way, and I may add that there are many more than the markedly insane who wander about thus in India. In some of the native States of Rajputana, I cannot say whether in all, there is a building, in the proximity of the gaol generally, set apart for those insane persons who are desired to be placed there by their relatives. This is under medical supervision, so that you will possibly call this a form of treatment. In zenanas and the houses of richer people, in all likelihood provision is made in their own homes." It will be observed that my correspondent does not seem to have visited the buildings said to be set apart for the care of insane women, and it is remarkable that he is my only correspondent who mentions them at all.

A lady engaged in work as a medical missionary is of the belief that, notwithstanding the evils of early marriage and marriages between near blood relations, insanity is much less common in Madras than in the Highlands of Scotland. As to treatment there is nothing done, and it is only the more intelligent of the people who would tolerate European treatment in such cases. The mass of the people consider that a case of insanity is one of demoniacal possession, and

very often the treatment is very inhuman. At best it is a repetition of incantations by a priest. From another source I learn that the practice of exorcism is in great vogue, frequently with a fatal termination. In a case of puerperal mania in a young girl, not only the priest but crowds of friends and neighbours joined in the religious services, which seemed chiefly to consist in the maintenance of incessant noise, the result being that the patient died in a few days, worn out by want of rest and sleep.

Two sisters, who have devoted their energies to medical work in zenanas during the last twenty years, say that they have often been struck by the comparative absence of mental cases in Bengali and Muhammadan women. They strongly suspect that this is due to the women being "put out of the way" either by starvation, neglect, or poison. It is within their knowledge that insane women are left to die, rather than that any expense or trouble, or the disgrace of breaking purdah should be borne. Such crimes can be committed with comparative impunity through the great difficulty in obtaining sufficient proof, even when no moral doubt exists. After recounting the details of an instance of gross neglect, these ladies add that the Government do not make it easy for cases to be put in asylums, lest the relatives should thus ease themselves of the burden of the cost of maintenance.

Perhaps the most valuable communication I received from my Indian correspondents was one from a lady attached to a hospital in Poona. She says:—

"I am very glad to give you any information in my power as it may lead to something being done for the assistance of women lunatics, for this I am sure is greatly wanted. My practice is mostly a hospital one, and I have seen but little of the treatment of insane women in their own homes. From the nature of their houses and the customs of the people, it must be almost impossible to keep them at home with any comfort to the rest of the family, and I think it quite probable that they may be quietly got rid of or so neglected that they die. My hospital patients are many of them of a better class than those in our English hospitals, and amongst them I have in many instances found the need of a better class asylum. Patients have been brought and left by their friends with some illness alleged, in whose case it soon became evident that the main disease was insanity; some have indeed acknowledged this and begged us to take in the patients. This has several times been the case with

respectable native Christian women who were attacked with insanity, and in their one or two-roomed houses it became almost impossible for their husbands to keep them. Of course in most cases it was equally impossible for us to keep them in a general hospital, and it was exceedingly difficult to know what to recommend.

“There is a Government Asylum in this station to which patients are admitted on the certificate of the Civil Surgeon, but I do not find that respectable people feel willing to place their women there, and I think that in the present state of things in India such a place to command confidence should be in charge of a woman doctor, being limited, of course, to women only. The asylum here is in charge of a native doctor supervised by the Civil Surgeon. Quite recently I had an application from a native gentleman high up in Government employment who was most anxious that I should take charge in the hospital of his wife who was insane. He had tried treating her at home with a nurse, but her state had become such that it was most desirable that she should be separated from her children; and he wished me to give her a room and attendance here, being willing to pay all expenses. I was quite unable to do so, being without the means of isolation or the necessary trained nurses. If there could be a few asylums established at healthy centres, officered by medical women, and containing accommodation both for paying and non-paying patients, it would be a great boon to a large and suffering class. At the same time, such a thing could not pay; only a few more enlightened of even the rich men would be willing to pay reasonable rates for their women. Still as a philanthropic work it would be well worth doing.”

Now let us pass to a consideration of the condition and administration of Indian Asylums. As has been already stated, they number only 24, and as they contain but 4,311 patients, it is evident that they are small institutions. The largest is at Madras and contains 623 patients; but the one at Vizagapatam has only 52, the one at Dharwar only 39, and that at Cuttack only 19. The whole system of administration is of the severest official type; the minuteness with which the reports and returns are examined and criticised is phenomenal and would greatly disconcert the majority of Medical Superintendents at home; and the attention devoted to the financial department must be irksome to a degree to the unfortunate heads of asylums. In only two instances

is the chief medical officer resident ; and therefore the real administration falls into the hands of subordinates—a most vicious system. All the Medical Superintendents are army medical officers in civil employ, and this, as we shall see, leads to many evils. As one reads the official reports one cannot avoid feeling that all the officers, from the Chief Commissioner or Lieutenant Governor downwards, are dealing with a subject with which they have no thorough practical experience. There is no Lunacy Board, and not a man in India has devoted such attention to mental disease and asylum administration as to deserve the name of a specialist. Another obvious cause of serious administrative defects is the poverty of the Government. Admittedly necessary structural and other improvements are indefinitely delayed for want of money ; the staff in the asylums is numerically deficient ; the pay is so poor that reliable attendants and servants cannot be obtained ; and deserving officers are refused an increase of salary. A few examples will illustrate these points. At Rangoon the attendants were insufficient and discontented. The Surgeon General for Bengal reports that the discipline among the warders is capable of improvement, but they are poorly paid and apt to leave on small provocation. The same fault is noticed elsewhere, especially at Lahore and Delhi, where they are described as very unsatisfactory and quite unfit to be put in charge of lunatics. The discipline seems to be vexatious, and heavy fines are frequently inflicted. In two cases a patient was killed by violence used to him by attendants ; in one instance the attendants were convicted and condemned to rigorous imprisonment ; in the other they unfortunately escaped the due reward of their villany. But the attendants are not the only officers proved to be unfit for their duties ; in one case it was necessary to remove the Burmese Deputy Superintendent for carelessness, negligence, and finally for corruption.

As sanitary arrangements in India are of the highest importance to health, and present difficulties and peculiarities due to the climate, it is unsatisfactory to find that defects are not always attended to with alacrity and vigour. In some asylums the sweepers are underpaid, are unsatisfactory, and embarrass the whole administration by strikes. At Rangoon the disposal of night soil gave rise to great difficulties and led to an arrangement that was by no means creditable to the authorities. The question of whether the

conservancy of the asylum should be carried out, as heretofore, by the lunatics or by hired labourers, became the subject of protracted discussion by the Committee of Visitors. It was pointed out that the Burmese, as a race, were not free from repugnancies to certain occupations; that, for instance, they have an almost universal objection to touch night-soil; also that they would not eat with midwives, whom they consider a degraded order of beings. By desire of the Committee the sane criminals in confinement in the asylum were invited, under promise of a gratuity of Rs. 3 per mensem, to undertake the asylum conservancy, but not a single volunteer was forthcoming. Some members of the Committee were of opinion that it was not right to impose duties on lunatics which, if they were sane men, they would not, except on compulsion, perform. It was, however, finally resolved that the lunatics should not be employed for collecting and burying the night-soil, but that paid sweepers should be entertained for carrying out the conservancy of the asylum. Two warders of the sweeper class were therefore engaged. And thus a satisfactory conclusion was arrived at, though the difficulty should never have arisen.

In some asylums the accommodation seems to be very bare and miserable; there is also occasional overcrowding, and consequently phthisis prevails. Several examples could be given where the accommodation for the sick is very limited and means of treatment most inadequate, indeed, non-existent. The Medical Superintendent at Madras reports that, considering the number of insane patients requiring treatment for mental and physical ailments in hospital, the accommodation is utterly inadequate for men. The hospital blocks are but ill-adapted for their purpose, being without separate accommodation for isolating superior patients or others requiring individually special treatment. There are no baths, no hot water laid on or the means of obtaining it except by boiling in a pot in the open; no ward at all for Europeans, and the whole arrangements are described as a makeshift. It is a fact requiring explanation that no fewer than 114 cases of itch occurred during one year in a population slightly over 600.

Perhaps the greatest blot upon the efficiency of asylum administration in India arises from the manner in which the Medical Superintendent holds office. He is almost invariably non-resident, is engaged in private practice, and has other important and exacting official duties. Besides, the pay is

small, the duties harassing, and the work under present circumstances highly unsatisfactory. The Deputy Superintendents, where they exist, also dislike the service, and petition to be employed elsewhere. At Jubbulpore there were two changes of Superintendent during the year. At Dallunda one acted from January to May; another from May to September; the same from November to end of December; and another from September to November. At Dacca three men held office within the year; at Putna there were four changes; at Berhampore there were three. During various periods, amounting to sixteen weeks, the Medical Superintendent at Calicut was away at camp. At Madras there were three Medical Superintendents during the year: during the past ten years there have been eleven. What can be expected of such a system? Nothing but evil and mismanagement. It is satisfactory to find that the Medical Superintendent at Madras has had the courage to expose to his official superiors and to protest against the manifold and manifest abuses and inconveniences which flow from such a deplorable method of administration. His remarks are so sound and his expressions so clear and forcible that I quote a paragraph or two from his report. His criticisms have this advantage, that they apply more or less to all Indian Asylums.

He says:—"The great difficulty in adequate superintendence of the Madras Lunatic Asylum that I have experienced, comes (a) from the large area (67·89 acres), and (b) from the varied nature of details of the superintendence, which occupy too much time and should not come before the Superintendent at all in my opinion.

"The difficulties of (a) are inseparable from any large establishment, but I consider the Superintendent is far too much of a steward and clerk and far too little of a doctor to insane patients. If his professional work is to be adequately done, he must devote four-fifths of his time to the patients, observing them, their habits, peculiarities, histories, ailments, and all the characteristics of insanity in the native mind. This must be the main work of his superintendence, but, as a fact, four-fifths of his time are taken up with steward's office work, large and petty contracts over grains and other food, looking into accounts, examining clothing details, how the cooks do their work, whether the toties cleaned the rooms or not, and such like details. If, therefore, the two are to be combined and done efficiently, his time is far too much occupied, and as his responsibility is

equally great, both in the professional and steward-like side, and the two aspects are from their size and amplitude of details enough to crowd one another out, I think his work should be lightened considerably in the steward's department, leaving him real leisure, where he has not now any, to follow up his professional work. If his responsibility is not lightened his work cannot be delegated with safety; and if much of his work can be delegated, and as I firmly maintain ought to be, his responsibility should be altogether removed. He should not be called upon to buy dhol and rice, to examine vouchers for the supply of blankets, and to trace out where a pair of slippers has gone; but if his responsibility is not removed over details such as those, his duty will be to constantly scrutinise innumerable petty details, find out and correct petty errors, until what I may call the distinctive characteristics of his mind from the medical side, are put aside more or less completely to take up those of a clerk, store-keeper, and jail warder. This will always make the work of superintendence in the Madras Asylum so irksome, and with its present size so unmanageable, that unless the whole system be altered I cannot believe that any Medical Officer can either be happy or properly useful, considering his mental training and qualifications, while so over-harassed with such innumerable petty vexations." And so on for several pages. All the officers seem to be overworked, probably because their duties are badly arranged and frequently overlap. The European attendants perform their duties well on the whole, but they have no holiday, there is no available reserve, and in cases of emergency untrained outsiders have to be employed to do highly skilled work. The native attendants are most unsatisfactory. They are deficient in number, recruited from a low class, they have neither the will nor the intelligence nor education to qualify them for their work; they look upon the patients as human beasts. Hence arises the constant lapse into perfunctoriness, the tendency to roughness, to the neglect of the watchfulness on which so much depends, and to feel that whether the work is well or ill done, the result, except in the long run, will not show much difference.

As already noticed, about a quarter of the patients in Indian Asylums are criminals. Their introduction seems to be a recent arrangement; formerly they were kept in jails. That was no doubt bad, but now the state of affairs seems to be worse. For the sake of compactness of administration, a

criminal element has been introduced into institutions from which they should have been kept separate. The Medical Superintendent at Madras very properly points out that the proximity of the criminal to the civil element has a tendency to cause a too marked centralisation of system, to consider the lunatic side of the question too little and the jail side too much ; and he believes it would be better to completely divide the two. The warders should not be the same ; the whole establishment should be disconnected, and the system of accounts simplified. To bring the prison element into a lunatic asylum is an incompatibility, and should be as carefully avoided as the addition of a jail to a charitable hospital for the sick poor.

There are still many, many points in the administration of Indian Asylums to which I might direct your attention, and about which it would be easy to say hard things. That is not at all my immediate object ; besides it is but justice to say that there are many indications, in the mass of official reports I have perused, that the present highly unsatisfactory state of affairs is not entirely and primarily due to disgraceful indifference and shameful neglect. Some efforts, perhaps not very vigorous ones, are made to administer the asylums successfully, but the system pursued defeats the best intentions and kills the enthusiasm of the best officer. For a person like myself, entirely ignorant of the requirements of the climate, the peculiarities of local circumstances, and the terrible difficulties created by racial and caste prejudices, minutely to discuss the many curious and highly interesting facts brought out in official documents, would be unwise. But I am able to submit to you a very important and instructive report submitted by the medical members of the Hemp Drugs Commission. Those two officers visited every asylum in India for a special purpose, but at the same time they made enquiries about asylums and lunatics, and put down what they saw and their views thereon.

The Commissioners were very unfavourably impressed with the manner in which the work of the asylums is done. Everywhere there was evidence of want of care and attention. In the Presidency Asylums there was less evidence of this, and in them, at least two of them, the state of things was very different from what was generally found in the smaller asylums. But even in the Presidency Asylums there was not that evidence of real interest in the work that might have been expected. The Commissioners think that this

want of interest and of systematic supervision everywhere was due rather to defects of system than to fault of the officers in charge. Concerning the worthlessness of the annual statistics, enquiry showed that this part of the work was left entirely to subordinates without even ordinary supervision. The Commissioners regret that this matter of negligence about statistics cannot be taken alone, but must be regarded as an indication of the general tendency of Superintendents to relegate their asylum work to subordinates and to fail to appreciate its importance. In his evidence Surgeon-Major — very bluntly said: "My position as Superintendent of the lunatic asylum requires me to take charge of insanes when they are sent in, and retain them until they are fit for discharge. I am simply keeper and incidentally medical attendant." There was evidence that this very imperfect view of the professional work of the Superintendent was very general. A few facts may be stated in illustration of this. It must be distinctly noted that these facts are by no means an exhaustive list of what was observed, but are merely illustrations of generally prevailing defects of administration.

In his evidence, Brigade-Surgeon Lieutenant-Colonel — said: "I do not consider that the question of cause is one which affects the treatment of cases. My enquiries therefore into cause are of a statistical, not practical, character. The result will not affect my treatment of the case." The case books contained no clinical history worthy of the name. As a rule the entries would be laughable but for the fact that they indicate a lamentable absence of anything like systematic treatment of mental disease by the Superintendents.

In the management of the asylums the Commissioners found such flagrant abuses as the following:—

(1) A patient suffering from acute mania was grinding corn in an open shed, in a glaring light, and in the midst of the other patients. This patient was shouting and singing and raving in wild delirium.

(2) One patient, raving and furious in acute mania, was chained to a tree in the middle of an open court occupied by other patients.

(3) As a rule there is not the slightest attempt at separating patients according to their mental condition. Convalescents are thrown together with lunatics in the most acute stages of mental disease.

(4) Worse than this, sane men, some of them recovered lunatics, others men who had never been insane at all since they were received into the asylum, were herded with lunatics in all stages of mental disease. Dr. — (Superintendent of the — Asylum) said before the Commission: "It is not my opinion from experience that it is either dreadful in itself or possibly disastrous to a man's mind to have to herd for years with lunatics though sane." This statement is quite contrary to the experience of the Commissioners; for they were addressed in the strongest terms by sane men thus situated whom they met in visiting the asylums.

(5) The Commissioners saw a post-mortem examination being conducted in an open verandah in view of lunatics who were wandering about all round. They were allowed freely to look on at the dissection of the dead body of a fellow patient, although they all seemed inclined to keep away from the gruesome spectacle.

These are cases of abuse which indicate the general defective character of the asylum administration; and the Commissioners consider it unnecessary to touch on exceptional cases of gross neglect, such as male and female lunatics being found together, which they saw.

It is noticed that some attempts have recently been made to introduce reforms. More attention is given in some parts of the country to arrangements for amusing and employing the patients, and to similar matters. In one or two asylums the results in this respect specially attracted attention and evoked warm commendation. But even in these cases reform seemed to have touched only the surface of the question. The systematic treatment of mental disease was practically absent; and the Superintendents admitted frankly that they have little satisfaction in their work.

Time will not permit me to continue, but I hope on some future occasion to resume this important subject. It was originally investigated by me as affecting the condition and treatment of native women, and it is this aspect which I specially wish to bring under your notice. From what you have already heard you will have no difficulty in observing that a few obvious suggestions at once present themselves.

(1) If the women in India are to be enabled to avail themselves of asylum treatment, institutions entirely officered by women must be opened at convenient places.

(2) The criminal element should be entirely removed from

existing asylums, and such patients cared for in places similar to Broadmoor.

(3) Army medical officers should no longer be placed at the head of Indian Asylums, as the requirements of the military service entirely prevent them from becoming efficient Superintendents.

(4) Flowing from these reforms would be many changes which need not at present be discussed; but in conclusion I would like to point out how indirectly medical women in England would be benefited. So far they have found comparatively few outlets for the employment of their undoubted qualifications for medical work, and it is abundantly evident that they have no career in asylum practice in this country. They might, however, gain the necessary experience in asylum administration here and then proceed to India, where they could carry out at least some of the many necessary reforms. Thus to open Indian asylum appointments to medical women would carry a double blessing.

Should this address lead to an interest being excited in the treatment of the insane in India, and especially as to the condition of insane women both in and out of asylums, a new and important branch of medical and philanthropic work will have been entered on, and the good and kindly souls who go on this errand of mercy will find themselves blessed in many ways and prove themselves faithful servants of the true God.

Discussion.

Sir JAMES CRICHTON BROWNE moved a vote of thanks to the President for his address, and said he was quite sure that no persuasion would be necessary to induce them to join in the vote. The President had gone a great distance for his subject, but he had brought it home to them in an exceedingly interesting manner. Everything must be interesting to them at that moment which related to their great Indian dependency. They saw how that great dependency had been stricken by plague and famine, and there could be no doubt that these things, by the degenerative changes they would leave behind them, as well as the terror and alarm they would surely have brought about amongst an excited and superstitious population, would aid to that great mass of lunacy already existing in India which Dr. McDowall had described to them. The President's figures they would admit were perfectly startling. The official statistics concerning the treatment of the insane were conspicuous by their absence. Private treatment seemed to be carried out to an enormous extent, and murders and outrages followed. Dr. McDowall's address had suggested to him the regret that part of the enormous sum of money that was expended upon the Opium Commission was not devoted to sending out a small Medical and Lunacy Commission to report on the state of the lunatics in India and the condition of the asylums there. He did not want in any way to reflect upon the Opium Commission, which did valuable work, yet

after all only arrived at a foregone conclusion, about which everybody, excepting a few faddists, were satisfied before the inquiry was commenced. He hoped and trusted that Dr. McDowall's interesting address, which involved great research, would attract attention beyond the Medico-Psychological Association, and that it would be considered by those responsible for the government of India. He would suggest further that it might be even the duty of the Association to press upon the Government the necessity of some inquiry into the state of lunacy in India and the condition of asylums there. It gave him a great deal of pleasure to move that vote of thanks to Dr. McDowall. He wished him every success during his year of office. It was very fitting that one of such experience and scholastic attainments should be elevated to that chair, which had been occupied by the highest thinking men engaged in their own department of medical science and usefulness. His acquaintance with the President extended over a very long period. He was a valued assistant of his at Wakefield, and he brought with him an excellent reputation; and he could recall the loyal and indefatigable assistance which was rendered by him in times when asylum work was indeed hard and not nearly so well paid. Their official introduction ripened into personal friendship, which had had an unbroken continuity right down to that day. From Wakefield he went to take chief charge at Northumberland County Asylum at Morpeth, and they knew how that asylum had grown and kept abreast with the requirements of modern science under his fostering care. He had been an able and devoted medical superintendent, and he was pleased to testify to the value of his work. Sir James concluded by wishing Dr. McDowall a successful tenure of his presidentship.

Dr. YELLOWLEES seconded the motion. The paper of the President was quite characteristic of him; and whether from personal appreciation, or admiration of his address, they were bound to admire him. They heard a great deal about Imperial Federation, but theirs was a greater federation still—it was a federation of humanity, and usefulness for human good. He was very much interested indeed in this paper, especially as regarded the treatment of the natives of India. At that moment he was in correspondence with an Indian graduate of a medical mission regarding a relative of his own, who complained that patients there had nothing like the care and treatment they should have. He thought Dr. McDowall had done well, and that his paper must be fruitful of good results. The direction in which he had indicated reforms was a wise and right one. It was a misfortune that military medical officers should be held to be efficient superintendents, but, of course, it was no blame of theirs, because as efficient superintendents they had had no training. Even if a European medical officer were efficient, he had not the assistance of efficient stewards, as was the case in the home asylums. The President had spoken wisely and worthily of women as superintendents for female asylums in India. He had great pleasure in seconding the motion.

The motion was carried unanimously.

The PRESIDENT, in responding, said they could not do too much for the Indian lunatics, and towards securing efficient supervision and care. After dwelling at some length on his association with Sir C. Browne at Wakefield, he concluded by thanking the meeting for the reception given to his paper.

Dr. EASTWOOD suggested that they should pass a resolution in favour of the subject of Indian Lunacy being investigated by a Committee of the House of Commons.

The PRESIDENT explained that such a motion would not be in order.

*Some Mental Aspects of Music.** By H. HAYES NEWINGTON,
M.R.C.P.ED.

Music, as a term, suffers much from diffusiveness. When we reflect that, in one sense or another, it denominates anything between the idle notes of the plough boy and the finished performance of an opera singer, between the productions of a Jew's harp and of a cathedral organ, between the playing of two or three foreign tramps and of a Philharmonic Orchestra; when we reflect that man's attitude to music is at one time active and at another passive, and when we also reflect that the acceptance of sound as music by man is largely dependent on his individual views and tastes, we must see how impossible it is to invent a definition of music that will serve as a universal standard, to which we can refer psychological observations without lengthy qualifications and limitations. I put forward this self-evident proposition in order to show how easily we may fall into error in particular considerations, if the term is used generally and without specialisation.

This warning is not altogether needless, for occasionally we have evidence of a too great sense of unity in the appreciation of music. I read the other day in a medical journal not only of the fact that the musical faculty had a special habitation in the brain, but also that this seemed to be in the first left temporal convolution. This surely is pegging out the cortex in claims with undue precipitation. Can we conceive the existence of a so-called centre capable of executing the diverse functions which are entailed even in one of the many branches into which music divides itself? Recent research tends all the other way—towards spreading areas.

I cannot even accompany Dr. Ireland on his restricted excursion towards separation, when he writes* :—"It will scarcely be questioned that music is no technical division, but a special faculty of mind." Though I readily follow him in denying the technical division I cannot admit the special faculty.

In my view everything tends to show that music in one form or another calls into play at various times nearly every

* Read before the Annual Meeting of the Medico-Psychological Association at Newcastle.

* *Journal of Mental Science*, July, 1894.

attribute of the brain; that its operation on the brain and through the brain is similar to that of other matters; that those components of the brain which are called into operation by music are either actively or passively used for other and parallel purposes, *mutatis mutandis*; that, in a word, there is no part nor function of the brain apparatus specially put aside for the purpose of music.

I propose to offer a short analysis of some of the more prominent facts, which will, I think, substantiate the foregoing contention. Of course, in looking at music either as a whole or in detail, we must not pay chief regard to high developments of the art. These serve as useful guides later on, but will not suffice to settle elementary questions. Rather must we look for and consider the earliest manifestations, the earliest point at which the musical element reveals itself.

Phonation readily suggests itself as suitable for such a purpose. We might, perhaps, go further back in point of time to the child's brain to study the development of the power of recognition and reproduction of musical sound. But the full value of the brain work in these directions can be better realised in an organ that is well developed in other respects.

In the Lumleian Lectures of 1880 the late Dr. Bristowe described the larynx as a musical instrument. If we adopt this view, as we assuredly can, we may theoretically assume that all sound productions of the larynx are musical. But if we use the term in its conventional sense we are aware that these sounds may be highly musical or the reverse, the dividing line between which it is hard to point out, though practically it is the line which separates ordinary speaking and singing. There are voices, however, that are very musical when used in ordinary speaking, and there are other voices that are equally unmusical in their rendering of music. It is not difficult to trace the passage of sound general into sound musical. Let us take the example of a clergyman reciting prayers. In parish churches of small size the prayers are generally rendered in ordinary speaking voice with the usual inflections. As the size of the building and the consequent tax on the vocal organ increase, it is found that speaking is made easier by dropping the inflections and assuming a monotone, the precise pitch of the tone being fixed either by the experience of the reciter or the acoustic qualities of the building. The next step is that,

in order to save the wear and tear of cutting off and renewing the passage of air through the larynx between the words, the voice is carried on and becomes more continued. A physical effect of prolonging the sound is the increase in resonance of the parts concerned; just as the resonance of a violin is better developed by a long sweep of the bow than by short sharp touches. In this stage of carrying on the voice, singing first begins to show itself. The next step is to open out and brace together the various air-chambers in the track of vocalisation—the chest, the larynx, throat, mouth, and nasal cavities—and when this is done the result is song. But though the reciter, or intoner as he has become, undoubtedly nowadays has musical effect in view, the fundamental idea of the process was, and is, increased sonority. The result may be summed up thus—by using this process in place of ordinary speaking, he can make as much sound with less effort and wear and tear, or he can make much more sound with the same effort and wear and tear. The same idea is carried out by the milkman, the sweep, and many others. Unless they availed themselves of this means of increasing sonority they would be able to carry on their vocal work but for a short time. The huntsman's voice would be heard by his hounds at no distance and for no time if he spoke his words of command. The robin would not make known his love complaints beyond the confines of a gooseberry bush were it not for the resonance implied by song. Increase of sonority, then, is the first purpose of using the vocal organs as they are used in singing, and musical effect is, so to speak, a by-product. It is an instructive fact that, while the Australian natives, for carrying their communications to great distances, use the cry "Coee," which we are led to believe contains one very musical note, their use of the vocal organs for the set purpose of creating music is beneath contempt.

To return to the intoner. He is frequently called upon in the course of a choral service to reinstate the inflections or, in other words, to vary the standard note upwards or downwards. Whenever he leaves the monotone and adds a single note to it of a different pitch, melody results. A melody, as we know, admits of infinite additions and arrangements of different notes, but, however elaborated, it has this simple beginning in principle. Having discovered the capabilities of the sonorous voice for providing pleasant effects, man, as is his wont, proceeds to utilise it to his

advantage as soon as advancing civilisation shows the way. The first direction he takes is the combination in sequence of vocal sounds varying in pitch. We need not stop to consider here the purposeless stringing together of a few notes. There are, doubtless, deep psychological reasons for a housemaid's or a groom's irresponsible vocalisation, humming or whistling while at tedious work.

But the emission of a single note or a combination of notes for a set purpose and with the idea of attaining a given effect is a very different affair, for mental effort then commences to show itself. If a man sings with another person or with a musical instrument it is soon found that unless certain laws, physical and mental, are obeyed, the results are unpleasant. These laws bring about an essential necessity that he must sing a note either identical with or in harmony with that sounded by the other, or by the instrument. In singing one or the other he attains his object by the familiar process of, first, a sensation of the standard note, next a perception. My remarks here are confined to the cognition of only one element of a note—that of pitch. For the present we leave out of consideration questions of duration, intensity and quality. Having got this perception—a task more or less easy—his kinæsthetic apparatus is set to work to evolve a note that matches his perception. The precise way in which this is done does not concern us now. The mechanism for altering the pitch of a song or hummed note is just the same as that used for raising or lowering the pitch of speech or laryngeal phonation. The reproduction of the note by whistling of course involves motor work in another direction. Assuming that the person in question is making his first serious effort to reproduce a note, his endeavours will be a series of actual trials, until such time as repeated success after endeavour has established in the motor centres an image of the co-ordination of muscular action necessary for accurate reproduction. In most people the establishment of a satisfactory relation between a perception and appropriate kinæsthetic action is a matter of comparative ease, but in some it is a matter of difficulty, while in a few it is a matter of impossibility. The attainment of accuracy in altering the voice to a given pitch is brought about by that element of mental comparison, which is made use of in a parallel exercise of each and all of the other senses, by the lady, visually, matching colours of silk, or, tactually, matching the

quality of the silk, by the tea-taster, by the wine merchant.

As long as the sample is before either the singer or any of the above, matching is comparatively easy. If the sample has been withdrawn, the case is complicated a little, for the recall of the sample, in other words, a memorial revival of a mental image, is necessary, and obviously there is plenty of room for error until practice and constant comparison with the standard has fixed the image with certainty in the cortex.

This fixing accurately of an image is the beginning and object of education, which is further advanced by acquiring the capacity to give a correct name to the percept or its recalled image, and, conversely, to call up the image which corresponds with the name. A similar sequence of events takes place in learning to sing in harmony. Comparison with the standard note shows the singer that certain other notes, trial notes in the first instance, combine with it, while others fail to combine and thereon displease. The notes, whether combining or not, after practice become fixed as images, and, besides acquiring their own connections with appropriate names, have their relation to the standard note named, and this relation and its name have to be learned. The harmonious relations are more easily learned than the others.

In singing a sequence of notes, otherwise in producing a melody, the same facts obtain; but unless objective stimuli of one sort or another are present, it is necessary to fall back on general memory as well as on images, or sense memory—for the latter can take no account of relations of sequences.

The Tonic Sol-fa system, though not very adaptable to complicated forms of music, has a psychological interest of its own. In the ordinary system a musical symbol has an unchangeable value—that is, a C is always a C, and when recognised will always call up in a sufficiently educated musician the right auditory image and no other. In the Tonic Sol-fa system a symbol has value only in relation to the foundation note of its scale, which may correspond to C or any other note in the ordinary scale. Therefore before the auditory image is called up by one of the sol-fa symbols the singer has to calculate the relation to the foundation note, the value of which has been temporarily fixed. The singer's brain has to work out a problem thus—if the foundation note corresponds to a note on the ordinary fixed

scale which if sounded would cause such a percept, and if the note desired stands in such a relation to the foundation note, recall the image of the desired note.

In using the term name I have only so far dealt with the auditory stimulus which evokes the revival of an image. It is necessary for a musician to learn the value of visual stimuli or symbols. These can be either written as letters or as signs, having each an appropriate place on the sets of ruled lines or staves.

The elementary steps in acquiring power to play on a keyed instrument from notes are very similar, the principal difference being that auditory images are less essential when playing from notes, since the instrument itself fixes the pitch. In playing by ear on a keyed instrument, or in any case on an instrument devoid of keys, such as a violin, recourse to auditory images is required.

In playing any instrument the motor activities are transferred from the centres of vocalisation to those regulating the fingers, arms and other parts necessary for the performance. The recognition of the symbols used for indicating variations of the duration and intensity of a sound, whether produced vocally or instrumentally, and the giving effect to such recognition, is brought about very much on similar lines.

I need not advert to the superstructure of intellect that can be built up to almost any extent on this sensory motor foundation. Music has its symbols, its grammar and its syntax. By these it has a power to give expression to extended imagination, deep thought and scholarly construction which can be and are exchanged freely between man and man.

A careful comparison of the methods by which musical action or thought is produced, with the methods by which other activities or thoughts are evolved by external stimuli, on the one hand, or internally by volition on the other, in every operation in which appropriate apparatus is called into action, must establish the fact that the same apparatus is universally used, the variation in effect being caused by the variation of stimuli and purpose, subject in every case to the control of the higher brain centres.

Since Broca's discovery we are rather tempted to use the production of speech and writing as the gauge by which we measure our knowledge of brain geography. It is natural that this should be so, since language itself, whether written

or spoken, is the necessary precursor of all enquiry and observation; and language is a fairly defined stimulus, and is not only useful but essential to the powers of cognition and subsequent naming for exchange of ideas. Nevertheless, language has its drawbacks. A single word gives rise to more numerous, more complicated, and more disturbing mental activities than does any other external stimulus. Further, the muscular action in expressing ideas, either orally or by writing, is in itself so complicated as to need a special, almost detached education of the centres, and, therefore, in the study of a pathological condition the particular affection of the mechanism of speaking or writing asserts itself as much as or more than the general affection of the centre. For instance, in connection with *agraphia* do we study a loss of power to reduce thought to paper by means of a type-writer in the same way as loss of power to use the pen? Do we consider as patiently and thoroughly the effect of organic or functional mischief in the auditory and visual centres in regard to music as we do in the matter of speech? It is true that infrequently in a description of a case of *aphasia* we come across a statement such as "He retains the musical faculty. He can whistle the 'British Grenadiers.'" I must not forget, however, to again refer to Dr. Ireland's paper as containing a valuable résumé of German and French enquiries in this direction. But I feel sure that much more use could be made of the musical art, which lends itself to the task by its greater definition of stimulus and by a clearer and more independent relation between the sensory and motor centres.

In another direction music stands alone, I mean in its power to throw a multiplicity of diverse but intermingled stimuli at the same moment on the brain, with a corresponding mass of percepts, concepts, and resulting kinæsthetic activity.

I will take the case of an organist accompanying a choir, and endeavour to enumerate some at least of the operations carried on coincidently in his brain. *Visually*, he probably has to read the words which he is accompanying. Beyond the ordinary brain work expended on reading and valuing the presented words he has to look ahead and have an eye to what is coming; for it is not reading under ordinary circumstances, since action most probably has to be taken on the words, and therefore has to be prepared for. Then he has to read the music. Here he needs to have at least

three sets of impressions on his visual centre at the same moment—the past, for comparison, and possibly connected directly with the present by a tied note, the present for immediate use, and the future, which it is necessary for him to know, in order to prepare the coming physical movements; and not only one, but several coming chords may be in his mind's eye, especially in fast music. Then, each of these impressions is of a composite nature, often highly so. The chord may be spread over three staves, the notes on each staff differing in position, and often the value of the notes on a staff is suddenly and arbitrarily changed by the writer of the music, the appreciation of this change requiring a complicated concept. In addition he has to use his eyes occasionally to direct his hands or feet in the regulation of the stops or for hitting a detached note either on the manuals or pedals, and while he is doing this he is playing with one or both hands from impressions that he has rapidly stored up ahead for the purpose. *Auditorially* he has to assimilate the voices of his choir in order to time his accompaniment, and often to correct or aid them. He has to follow each of four or perhaps more vocal parts. In addition he hears and takes note of the accompaniment itself. The immediately passed impressions are retained for purposes of comparison, and especially for judging the time, the appreciation of which is essentially an auditory duty. *Kinaesthetically* he is as busy. He must give effect not only to all the above impressions, but also to ideas which his brain elaborates in connection with them. The hands have in rapid succession and in obedience to revived movement memories, to make as best they can complicated motions in playing the combinations of notes; one hand may have to play several such combinations to one played by the other, one or more fingers may similarly have more movements to make than the others of the same hand. And yet, again, one hand may have to play in triple time, while the other may be playing in two or four time, this entailing the division of a given period of time into three equal portions for one hand, and two or four equal portions for the other. The touch has to be varied and regulated, touch being chiefly on the organ represented by relative quickness of impact and duration of depression of notes, and not by force. The feet share in such movements. Pedal playing is not merely putting the foot on a certain spot, as one would put it on a carriage step: the heel and

toe, or even the edge of the foot, can be used independently : the two feet have to work in and out with each other, and finally variation of touch is part of the duty of the foot also. Both hands and feet are used in other ways, for shifting stops, opening the swell, and so on. Finally we have to take account of the complicated co-ordination required to adjust the line of sight not only horizontally but vertically, so as to survey a combination of notes which may be spread over a considerable space.

Over all these movements the thinking brain exercises its control in the general sense of time, in the appropriate variation of the intensity and the character or timbre of the sound supplied in accompaniment, and in general taste. The organist has frequently also to relieve monotony of accompaniment, for instance, in a long psalm by inversion of chords or by adding a separate melody of his own construction. And all this brain work has to be done quickly and done well. There is no picking and choosing of time ; no delay is permissible. And withal little accidents and troubles such as an organ is exposed to have to be remedied or obviated in some manner without the organist omitting a sensible portion of his duties as a performer.

Looking at the enormous amount and diversity of the mental operations thus involved, we are driven to the conclusion that a great portion must be done by reflex action—a given stimulus exciting the appropriate percept—and through it the related energy without conscious interference on the part of the higher centres. In fact the mental current is short-circuited. Such, undoubtedly, is the case, and to my mind the value of music as a field for psychological enquiry lies in the clearness and crispness of relation between stimulus and effect, which is chiefly due to this absence of absolute necessity to refer directly to the higher centres, a reference which at once lets in the influence of more diffuse mental activities. In the matter of time reactions especially a good deal might be expected from the fact that constant use has impressed images of perception and images of motion so deeply that the recall of each must be practically instantaneous.

The depth to which these images can be etched into the centres is well illustrated by a most interesting case thus comprehensively stated by Dr. Legge in a paper on Music in Insanity :—*

* *Journal of Mental Science*, July, 1894.

"A lady highly educated and a good pianist is very demented; she does not recognise her attendant, and cannot look after herself in any way; she takes no notice of music played in her hearing, and does not of her own accord go to the piano. If placed at the instrument and music put before her she plays at once, reading difficult music at sight. She generally plays far too quickly, and, if in a bad temper, her playing is quite a scramble. She plays fairly correctly, but makes more mistakes than she formerly did. If a piano duet be placed before her she plays first the page to the left (the bass), and then, without pausing, the page to the right (the treble)."

Such a case would be quite inexplicable if we regarded the reading of music at sight as involving to any sensible degree the operation of the higher centres, but it is quite explicable on the assumption that the stimulus conveyed to the visual centres can, and did in her case, excite the kinæsthetic centres without the interference of the higher brain. The correctness of the latter view is confirmed by the fact of her reading first one page of a duet and then the next, a procedure that completely negatives the slightest co-operation of thought. I have a case under my care that tells the same tale from day to day. The patient plays on the violoncello and I play the piano. He is a scholarly musician, with a nice sense of the art of music and with fair execution. He is the subject of urgent aural hallucinations with advancing dementia, which is making its mark alike on musical and general intellect. The "voices" frequently address him when playing, and I can at once recognise the fact by his withdrawal of intention and feeling, though he goes on playing in an abstracted manner pretty correctly. It is then a question whether the voice or the music is to get the better of him; if the latter he resumes his previous feeling, but if the former he suddenly stops after playing several bars in a perfunctory manner. A violent conversation with the voices may put an end to the performance, but a few notes of the piano may bring him back. In the latter case I find invariably that he has lost his place completely; though he has been playing these bars by reflex excitation of the motor centres independently of, and in spite of the storm going on above them, yet the perception of the carriage of the piece is not registered in his memory. I do not propose to further consider the connection of music and insanity or other pathological conditions, for I am absolved from that duty by

the papers of Drs. Ireland and Legge, to which I refer you for a patient and true exposition of the prominent facts.

Of course when I have been so far using the words sensation and percept I should not wish it to be thought that I had left out of sight, except for convenience, the element of concept. It is admitted that, while for purposes of description, percepts and concepts are treated as entities, the former in fact shade off into the latter, and, further, that a percept supposes some amount of conception, however small. It follows, therefore, that in such cases as I have related above, even when the action of the higher brain is shut off, a certain amount of minor conception must be taking place. It has suggested itself to me that the facts observed in them make for the correctness (*quantum valeant*) of Dr. Bastian's theory of a concept annexe being attached to each of the centres, which are now recognised as essential to recognition and reproduction of language by speech or writing. This he holds in sharp conflict with Dr. Broadbent's theory of a separate concept centre, the percept centres being inadequately provided for the formation of concepts.

Before I leave this part of the subject I will venture to offer a few observations that I have made in my own case. When playing over, say, a chant, before the choir begins to sing, I can generally manage satisfactorily to commit the whole to memory, unless it happens to be a complicated and entirely new chant, in which case a subsequent reference to the music is occasionally necessary. In the same time my fingers have instinctively arranged for the future action. One does not as a rule in simple music trouble much about that, though occasionally an awkward interval or complicated arrangement of notes receives some little direct thought. Trusting then to memory, with my eyes directed to the psalter, I am distinctly conscious of the recall of various sensory images from which to play. Sometimes these are images of the notes as they appear on paper—but generally they are representations of the keys which are the right ones for effecting my purpose. One never looks at the keys themselves except under circumstances of great difficulty or isolated excursions to distant parts of the keyboard, and even then but seldom. I take it that such transferred representations are evidences of commencing action of the motor centres after receipt of a message from the sensory centres. It may be possible, however, that the images are but phases of memory which applies itself to a

succession of keys instead of notes. But when playing from music I am frequently conscious of a dim key image accompanying each note. If in the course of playing there is a little uncertainty in an odd note, of which uncertainty I am at once conscious, I instinctively attempt to puzzle it out by key images, if unsuccessful I refer to note images, and if again unsuccessful I look at the music itself. In attempting to recall music when I am not playing I as often think of it in keys as in notes, but when I am thinking it out as a matter of construction or harmony I invariably use note images. The reason no doubt is that in such questions motor centres have no part, and therefore no connection between the sensory and motor has been created in the past and cannot be recalled in the present. When I am fresh and well I find that all the complicated requirements above detailed are easily and quickly fulfilled. I am conscious of an instantaneous grasp of the position and am fully prepared to take proper action. I have a feeling that everything is well balanced and so ready that even in moderately fast music I have time to leave the chords in progress and think out inversions and other agreeable variations. But this happy frame is easily upset. Errors or bad time on the part of the choir beget an irritable frame of mind, which, while it is engaged in vigorous attempts to put matters straight, is taken away from its reflex work. Dim candles hinder the quick formation of visual percepts, though when they are formed motor results follow quickly enough. When tired out by previous work, I am very conscious of delayed action, the whole brain is slowed—to use the apt expression of one of my patients when he can't write his interminable letters—the eyes are sluggish, the fingers lazy. But the worst phase is when I am under the influence of that form of mal-assimilation toxæmia which we are apt to call gout. The auditory sense is rendered most acute. I am pained by want of time and tune on the part of others to an extent, and in a manner which, however it may be justified, is not philosophic; memory, judgment and inventiveness are sadly impaired. I have to rely almost entirely on the music, which is attacked promptly enough, but the transmission from sensory to motor is hindered and disorganised, with the result that reflex action cannot be depended upon for motor excitation. The percept may be clear enough, but the fingers are at a loss what to do, until conscious cerebration comes to their aid. This dislocation of combined action is a phase very sensible

to me. The distinction between the vigorous, the weak and the disordered cerebration is also very marked in my mind. The net results of playing a service confirm the distinction ; in one case but little fatigue is found, in the next considerable exhaustion, in the last not only exhaustion but confusion.

We next turn to the more passive relation of man to music—the influence which it exerts on him as a listener. This influence is undoubtedly powerful and extensive, but a superficial analysis readily establishes the fact that the sum of the influence is the result of the co-operation of many diverse elements.

I need not enter into the relations of music with intellectual recognition and thought.

The connection between music and emotion is a matter of every day observation. My impression is that music has little if any power to directly provoke specialised emotion unaided by association. It freely produces, however, broad emotional states such as that of general pleased comfort or of excitable unrest if the subject is so predisposed ; it may even succeed in changing an already existent emotional condition, as for instance in soothing irritability. On the other hand it is itself very much at the mercy of emotion, which may altogether annul its influence.

Having regard, then, to its uncertain hold on emotion, it is necessary when we see evidence of the latter in an individual as concomitant to music, to closely watch whether outside factors are not the real contributors. Associations either objective or subjective play a great part, memorial association being a conspicuous actor. Music, by means of its universality and frequent use, more than any other brain stimulus affords plentiful opportunity for both formation and reproduction of such associative relations. One hears a piece of music under such and such emotional conditions ; a repetition of the same piece after a lapse of time may reproduce a corresponding emotional state. We experience the same power of association when the sight of a half forgotten view or face brings back not only the positive memories, but also a subconscious remembrance of the circumstances under which they were originally registered.

The manner or the place in which music is performed, the persons performing, even the reputation of the composer have all a contributing influence. Song music, which is a powerful evoker of emotional condition, derives most of that

power from the sense of words. Religion, patriotism, party feeling may produce in conjunction with music outbursts of emotion which clearly are not warranted by the composition itself. Other and possibly trivial matters contribute, but are apt to be overlooked on account of their triviality. On the whole it seems justifiable to assert that music is far more efficient as a carrier than as a manufacturer of emotion.

The physical attributes of musical sound, such as character, texture and volume present no special features psychologically. Their influence is exactly parallel to that of other objects appealing to the senses. Pleasure, indifference or displeasure may be caused, and it is important to recognise the fact that pleasure or displeasure may be strictly confined to the sense and not necessarily extend beyond the sense into higher centres. That this is so in the case of the lower senses, taste and smell, is plain enough, but it is not so obvious in visual and auditory sensations, since the boundary line is made less distinct by the influence of cultivation which insensibly extends it upwards. Eye and ear easily become dissatisfied with raw colours and sounds however sensuous, and the demands become more exacting. But it is to be remembered that this evolution is essentially æsthetic and not intellectual. Many people say that they admire Wagner, some really appreciate his tone pictures, but very few attempt to analyse them or consider how they are produced and for what purpose, or endeavour to fit the effect to that purpose. The reason for recognising the independence of sense gratification and intellectual satisfaction is that it partly explains the marked pleasure which many idiots and others of low intellectual development evince in listening to music. The idiot retains his pleasure sense more or less, and music is one and a ready means of gratification.

Sense gratification undoubtedly is the foundation of pleasurable interest in music, but the average man requires something more. He wants some evidence of purpose or intention. There are many pleasant sounds in nature which arrest the attention, temporarily gratify, but become after a time a source of indifference, possibly even of annoyance. Evidence of intention is supplied in various ways—by form, by variation of pitch and intensity, by the time rate and by rhythm. All these have more or less influence of which we may not be directly conscious, unless they are well marked; but we soon are affected by their absence or erroneous application. It may be asked whence and how comes this

element of intention. In the consideration of music, we are apt to lose sight of the fact that it is a creation and has no occult origin. We perhaps have not entirely lost the mythological suggestion of the ancients, and, unless we think the matter out, we may to a certain extent entertain the idea of the band of goddesses directing the evolution of music according to their own laws and principles. But, leaving out extreme variations of personal susceptibility, and granting the non-existence of external associative influences, the intention of music, by which its highest influence is exercised, is very much the intention which is put into it by the maker or composer. From this it follows that the intrinsic power of music itself is not without limits, and further that the suggestiveness of music is not primarily a matter of individual fancy on the part of the listener. So far the musician's art and the painter's art go together on parallel lines, neither colour nor sound which bear no evidence of intention has more than a passing interest. When colour or sound is invested with intention the direction in which the mind of the subject should travel is laid down by the composer. But at one point ear and eye effects diverge enormously. A picture may suggest motion or not, as the intention may determine, but the sense of motion is the result of an intellectual analysis of the circumstances depicted by the painter. With music the sense of motion is ever present, and is quite independent of any such analysis. Impression succeeds impression, and when impressions cease, music ceases. In pictorial art our object is physically at rest, the various parts can be contrasted at leisure, but we cannot get music to stand still; contrast is a contrast between present and past. Motion is the essence of music, and must find its account in the brain, if brain and not the limited sensory apparatus is to be reached.

The general course of musical effect is mainly shaped by the time, that is the number of fresh impressions thrown on to the listener in a given time. Rapidity, as a rule, suggests busy bustling, though a rapid recurrence of minute and subdued impressions may produce restfulness. On the other hand slow and measured movements not only fail to suggest activity, but keep the brain back from contemplating it. I have frequently noticed that when people are illicitly conversing during a performance the rate and eagerness of their communications tend to follow the course of the music.

But whether the time rate of music be fast or slow, there

is a pressing need for some shape or form to be given, some marking off and registration of progress. A flow of musical sounds, however sensuous, is of no account unless there is some order in them. Such division and regulation of sound progress is the province of rhythm. This element of rhythm in my opinion is the leading factor in determining the influence of music. We cannot perhaps always recognise its importance, unless it is obviously and intentionally so marked as to arrest the attention. If however, there be the least interruption, we are immediately rendered sensible of what its loss means. A convincing illustration of this is supplied by poetry. Why should rhythm be of such importance? I imagine for the following reasons. Music, as shown above, implies continuous motion; continuous motion universally implies continuous action; and action universally requires some regulation for its efficient and least costly continuation. We see rhythm everywhere. Our sun, our earth, our seasons and days all move rhythmically. Our individual lives tend to fall into rhythm day by day. Many of our habits are but acquired rhythm. Our bodies live by rhythm, a want of rhythm tends to restrict life by reason of increased wear and tear. As individuals it does not matter to us whether want of rhythm is in respect of muscular movements, or mental movements, or matters objective or matters subjective, the stress all comes back to one point—the brain itself. It is the brain which is saved by rhythm, for rhythm means the easy anticipation and preparation for work to come, and an easy subconscious execution thereof. Want of rhythm means a fresh appeal to the higher centres necessary for the execution of every detail, with consequent earlier exhaustion. Disappointment in anticipation is a source of irritability in all matters however small. It is difficult to put into comparison the rhythmical muscularity of a smith and the rhythm of a simple hymn tune. But the principle is the same. The effect of balking muscular action is obvious, the balking our ears is more hidden in effect, but the two only differ in degree.

Rhythm has another connection with music. As I have said music implies motion. The suggestion of motion to the mind begets in it a suggestion of associated physical activity. We see this constantly in the beating of time by the finger or foot or the nodding of the head of a listener. Rhythm determines the nature of that suggestive activity. Naturally a regular progress of events with even time

divisions is the most suitable to prolonged motion, and man in his every day work follows this out. One leg follows its colleague with measured regularity. For certain purposes man varies his rhythm, though with a loss of total efficiency.

The mental effect of musical rhythm assumes the greatest importance when it assists man in motion—that is to say music may suggest motion to man, but when man has already determined on motion, music which marks and furthers the rhythm appropriate to the chosen motion is the music which produces the most obvious effect. The simplest example of this is a march, by which large bodies of untrained persons can be got along on a tedious journey with a diminution of fatigue and a corresponding increase of pleasure. The foot coincides with the drum in point of time, and the coincidence of the most marked event in the musical rhythm with the most marked part of the muscular rhythm is anticipated. The fulfilment of that anticipation is a source of satisfaction, the disappointment, as we know, is productive of uncertainty and displeasure. We experience the same influence in listening to music while we are stationary, the passive reception of the sensory stimulus taking the place of physical action.

Man gets tired of sameness even in order, and soon begins to invent variations in order, which allow of the principal idea being carried out. To this origin can be attributed the dances of savages, the waltzes, mazurkas, varsovianas of later date. Even the developments of recent years, *e.g.*, barn dances and Washington Posts are elaborations of the principle. Then men construct music to follow these developments, and a suggestion of the appropriate movements is brought about by the performance of the music. It is perhaps a little difficult to trace the connection between rhythm and suggested action in commonplace music, but a study of first a tarantelle, the musical representation of the alleged wild dance of a tarantula-bitten person, then of a so-called spinning song, representing regular but busy action, and then of a cradle piece will suggest the downward lines on which we can reach the point where music is associated with a minimum of incitation to motion.

I am conscious that this short analysis of musical facts must be considered as most incomplete, and I do not for a moment expect that some of the views which I have expressed will meet with ready acceptance. But I do suggest that in music we have a valuable aid to the scrutiny of the brain in

its workings, and that to utilise this aid to the greatest advantages it is requisite to subject all facts connected with music to the closest investigation. In my own practice I have met with more than one case in which forecasts, which events have justified, have been made from the results of musical introspection. The tongue can distort or conceal evidences of mental want or of mental preservation which can be revealed with more truthfulness by the fingers or larynx.

I conclude with a reassertion of the principle that no part nor function of the brain is specially put aside for the purposes of music.

Discussion.

The CHAIRMAN said they were all grateful to Dr. Newington for his very interesting paper. It was too difficult a question to discuss in many of its aspects right away but there were many points inviting remark. In the Association there was a considerable number of well-trained musicians who should be able to express opinions on the paper.

Dr. MERCIER said he had one complaint to make about this paper. That was that it was an eminently indiscussible paper. (Hear hear.) It covered such an immense deal of ground, and introduced such a quantity of matter which, while it was not undebatable, was difficult to debate on short notice. While some of Dr. Newington's conclusions scarcely commended themselves to him, there were others that he agreed with, especially his conclusion that the faculty of music is not localised. There had been a tendency among neurologists to let localisation almost run mad, and to find a definite locality in the brain, which could be covered by the tip of the finger, for every form of human activity. With that plan of localisation he did not agree at all. It was manifest, from the analysis the author of this paper had given them of the enormous number of activities involved in musical execution, that no strict localisation could be made, but that the execution of music, at any rate, must involve the activity of a very large proportion of the brain. Then he did not know whether the author had put quite enough stress on one aspect of music which, to him, was most important, namely, that music is essentially not so much a provoker as an expresser of emotion. He thought that the main function of music was to enable us to find expression for feelings which are so vague, which are so voluminous, which are so unprecise, that there is no other method by which they can be expressed. They cannot be put into language. It was these great fundamental emotions, which were not verbally expressible, that music enables us to give expression to. This seemed to be the function of music, and the natural imitativeness of man enabled him to use that power. Doubtless music had a great power of arousing emotion, but that was secondary. Its primary function was to express emotion. That was a matter that he would wish to emphasise. And this view fell in with several other facts they knew. It was a curious fact that many idiots, persons of very low intelligence, had the musical faculty in a comparatively high degree. That is, they were very much influenced by hearing music, and they have a certain capacity for producing music. Did not that fall in with the view that music was largely non-intellectual? It belonged to the side of feeling, and, however low the intelligence of a person might be, his ability to feel might still be retained in a remarkable degree, and also his ability to express the feeling in the only way in which it could be expressed. There was one classical instance of the connection of music with insanity that the author

did not refer to. There had recently been originated the Society of St. Cecilia, by which music is to be brought home to the sick, and its influence on bodily ailments—whatever influence it has—is to be exerted on the patient. But there was a classical instance of this. Surely their Treasurer, organist as he was and taking part in church services, could not have forgotten the influence of David's harp on Saul. He (the speaker) would have been glad to hear his views on that. The paper was so voluminous that he could not be expected to cover it all. These few remarks were all he was inclined to make on the spur of the moment. However, he might add that there was one statement made by the author in his paper which was a surprise to him, and before Dr. Newington committed his paper to print he hoped it would be modified. The author said that as soon as the monotone of the psalm in intoning a service became broken by a variation of tone, at once there was melody. Dr. Mercier did not think that that statement was at all in accordance with the experience of most of them. (Laughter.)

Dr. T. O. WOOD said that he was very glad to hear what Dr. Newington said with regard to memory in music. It had been said that because a man could sit down and play a long sonata right through without music, that that showed a wonderful effort of memory. Now he took it that memory had nothing to do with it. There were cases one knew of demented patients, where practically all intelligence had disappeared, yet leaving the musical ability as perfect as before. Then with regard to rhythm. It came to some minds having no music whatever in their composition. Music, he took it, was one of the most powerful emotional stimulants we have. And not only so, but it was an exciter of sensations. The most extraordinary sensations were produced in different people by musical sounds—sensations such as tingling at the extremities, the sensation of cold water running down their backs, shivering, etc. All these sensations were produced by music.

Dr. T. S. TUCK said he was sorry that Dr. Newington had not told them a little more about the musical state in different patients. He could not say that he could agree with him that he would find a dement who was a really good musician. From his own experience he might often find such a person able to play to a certain extent while on one note, by that wonderful thing they called "ear," yet he would always find that, when a man had got to that condition, though he might play, there was something wanting. There was something they missed. It became more the music of the piano-organ than of a sensible being. It was remarkable that a man who had never learned to play would take a morning paper and sit down and go right through it by striking the same notes over and over again with the same two fingers. (Laughter.)

Dr. PERCY SMITH thought that the tendency of the discussion had been rather to minimise too much the intellectual side of music. The tendency had been to point out that music was rather a lower faculty, merely expressing emotion. Surely, however, the intellectual faculty in music was a very large element—(applause)—though it might not be as large as they could wish. They saw that the maniacal patient became incoherent in music. Then again in cases of general paralysis. A man who had been a good musician lost his musical power in the same way as he lost other powers, and, when he played, he played in a loud way, annoying to other people, though thinking in his exaltation that his playing was perfect. Dr. Mercier's idea was that music expressed emotion. He (Dr. Smith) was sure it had another function—that was, to give an outlet to movement. In the case of many people their pleasure was shown by movement in this way. As to the remark about the effect of David's harp on Saul, one often saw the same illustration of the mental attitude of patients towards music. Many persons were annoyed at others playing. Only the other day a man said to him: "If that fiddler does not stop, I will kill him."

Dr. CLAPHAM said he was constantly disappointed with the loss of rhythm, and he should like to resort to action in these cases.

Dr. URQUHART recalled a case which occurred in Murray Asylum, and published in *J.M.S.*, of a man who had degeneration of the tip of the left temporo-sphenoidal lobe. He had amusia, although formerly a musician and a fine singer.

Dr. NEWINGTON, in reply, recalled his reference to Dr. Legge's paper in 1894, and the excellent paper read by Dr. Ireland on the pathology of the subject, as he had not purposed to discuss the relation of music to insanity. The real object of his own paper was to raise the psychological question.

*Tuberculosis in the Insane; its Prophylaxis.** By ERIC FRANCE, M.B., Assistant Medical Officer, Northumberland County Asylum.

In venturing to read before you a paper on "Tuberculosis in the Insane; its Prophylaxis," I am deeply conscious of the responsibility of my position. The very mention of tuberculosis seems to reopen long vistas of investigation and research, which stretch far away into the distance of the earliest medical times. Since the days of Galen and Mangetus the learned in medical science have with unwearying persistence investigated and studied the pathology and treatment of this disease. To the work of these I fear I have little to add, but I submit that neither the presentation of old truths in a new light, nor the adaptation of past experiences to present needs, is without its value. It is from this point of view, then, that I have ventured to approach so vast a subject.

In the short time at my disposal I do not intend to do more than refer in the most incidental way to the pathology or the treatment of tuberculosis. The pathology of the tubercle bacillus, its products and its effects upon the tissues remains practically the same as Professor Koch described it 15 years ago.†

With regard to cure, I believe I express the opinion of scientific men, when I say that up to the present no such thing exists. That recovery takes place is certain, but all we can do in this direction is to place the patient in an environment, and his tissues in a condition best calculated to bring about the death of the tubercle bacillus. I do not refer in this connection to Koch's latest preparation of tuberculin, the "Tuberculin Residue" (T.R.) for which

* Read before the Annual Meeting of the Medico-Psychological Association held at Newcastle-on-Tyne, July 29th, 1897.

† *Berliner Klinische Wochenschrift*, 1882.

he claims immunising properties, and which has been too recently introduced for a definite opinion to be formed about it.

It seems to me that to prophylaxis we must turn as affording practically the only chance of reducing the death-rate from phthisis in our asylums, and it is to this subject that I wish particularly to invite your attention. That the death-rate is terribly high, no one, I take it, will dispute. My attention was first directed to this subject by the high and increasing death-rate from tubercle in the Northumberland County Asylum.

In 1894 deaths due to tuberculosis were 30·4 per cent.

„ 1895 „ „ „ 27·6 „

„ 1896 „ „ „ 37·2 „

6 months ending } „ „ „ 46·6 „

June 30, 1897 } „ „ „ 40·2 „

For 18 months ending }
June 30, 1897 } „ „ „ 40·2 „

Before coming actually to the subject of prevention, will you allow me to recall to you, very briefly, the modes of infection of man by the tubercle bacillus? These are indeed deserving of the closest study if we are to hope by prophylaxis to diminish the mortality of the disease. They may be considered under four heads.

1st. Conveyance of infection from mother to foetus in utero. 2nd, Inoculation. 3rd, Ingestion. 4th, Inhalation. The first may be neglected for present purposes. The second, *Inoculation*, may be dismissed with the remark, that it has been suggested with propriety, that lupus may in some cases be a form of inoculation tuberculosis with tubercular material not virulent in degree. It has been conclusively proved by inoculation experiments on animals that the results as regards extension from the local lesion vary exactly as the dose of tubercular material.

EXPERIMENT I.—One c.c. of virulent milk from a tubercular cow injected into the peritoneal cavity of a guinea pig produced in 16 days, besides the local lesion of the peritoneum, tuberculosis of all the internal lymphatic glands, of the cervical glands and of the liver and spleen. Whereas one c.c. of a 10 per cent. dilution of same milk produced in the same time a local lesion limited to the omentum.

The third form of infection is *Ingestion*. Speaking generally, this is a disease of childhood. The watchful eye which is kept upon the sanitary conditions of the dairies

and slaughter-houses of the asylums of Great Britain renders ingestion tuberculosis in the ordinary sense extremely rare in the insane. Before leaving this subject, however, I may quote a couple of feeding experiments on animals which illustrate important points.

EXPERIMENT II.—A healthy pig was fed *once* with 120 grammes of virulent tubercular lung from a cow. It was killed in 57 days, and a small tubercular ulcer, $\frac{3}{4}$ in. by $\frac{1}{2}$ in., was found in one of the Peyer's patches in the middle of the ileum. Otherwise the alimentary tract was normal. Nearly all the mesenteric glands were tuberculous, as well as the posterior mediastinal and the glands in the lesser omentum, while the liver, spleen, and lungs showed extensive miliary tuberculosis.

This experiment emphasises the fact that the local lesion may be out of all proportion to the magnitude of the tubercular disease found in the organs of the body.

EXPERIMENT III.—Four guinea pigs were fed in the course of two days with 200 c.c. of tubercular milk which was not very virulent. Each animal got about 50 c.c. of the milk. One died in 25 days, and showed *no tubercular lesion*. The other three died in 49, 53, and 67 days respectively. In these tubercle was found only in the intestines and mesenteric glands of the first two, and only in the mesenteric glands of the third. All three animals, therefore, showed a limitation of the disease in accordance with dilution of dose, analogous to that found in the inoculation experiments referred to before. These experiments have been already mentioned by Dr. Sydney Martin.*

The last animal showed a point which is of great importance in the study of the mode of infection of tuberculosis. There was no local lesion in the intestines, yet the disease was present in the mesenteric glands. The conclusion is clear, therefore, that the bacilli had passed through the intestinal wall without producing the characteristic lesion, and had stopped and grown in the mesenteric glands.

We now come to the fourth and, as regards the insane, by far the most important mode of infection, viz., *Inhalation*. The source of inhalation tuberculosis, as has been conclusively proved by Koch,† Villemin,‡ and Nocard§

* Article "Tuberculosis," Clifford Allbutt's *System of Medicine*, Vol. ii.

† "Die Ätiologie der Tuberculose." *Berlin. Klin. Woch.*, 1882.

‡ *Gaz. Hëbdom.*, No. 50, 1865; *Comptes Rendus*, lxi., 1886.

§ "La Tuberculose des Animaux—Domestiques," *Dict. Vet. Pratique*, p. 413.

in inhalation experiments on animals, is tuberculous sputum. Tubercular disease may be communicated by direct infection of sputum in a moist condition, as shown by the disastrous results produced by a tuberculous midwife who was accustomed to blow down the mouths of newly-born children. No fewer than ten of these became tubercular. But the most fertile source of infection is the tuberculous dust into which tuberculous sputum is so readily converted when dry.

Osler states that patients with advanced pulmonary tuberculosis throw off in their expectorations countless millions of the bacilli daily. From a patient with moderately advanced disease, whose daily expectoration was from 70 to 130 c.c., Nuttall* estimated by his method that there were in 16 counts, extending over two months, from $1\frac{1}{2}$ to $4\frac{1}{2}$ billions of bacilli thrown off in the 24 hours.

Cornet has pointed out† that the dust taken from a room in which a tubercular woman had lived and died was infective after being kept six weeks.

Bacilli may even be detected in the sputum before the establishment of physical signs, and for their identification in the sputum, at this or indeed at any time, the centrifugation method described by Ilkewitsch is the best.‡ His method is as follows:—Sputum $\frac{1}{2}$ c.c., distilled water 20 c.c., 8 to 10 drops of a 30 per cent. solution of caustic potash are well mixed in a porcelain capsule and heated till vapour forms. When the sputum is dissolved a little casein is added. One or two more drops of caustic potash are added, the mixture further heated till it becomes of a translucent milky appearance. It is poured into a test tube and a few drops of acetic acid added until the first signs of clotting of the albumen appear. The remainder is then submitted to the action of the centrifuge for 5 or 10 minutes, and the resulting deposit collected, stained, and examined in the usual way.

I now come, after what I hope has not been an unwarrantable or unduly tedious delay, to the subject of prophylaxis.

Against a foe so numerous and so formidable as the tubercle bacilli our most formidable weapons must be arrayed. The time I believe has passed when the physician based his hopes of victory over the tubercle bacillus on vapours of creosote and casual sprinklings of carbolic lotion.

* *Johns Hopkins Hosp. Bulletin*, May, 1891.

† *Ueber Tuberculose*, Leipzig, 1890.

‡ *Centralblatt für Bakt.*, February 5, 1894.

Quite recently a movement has arisen in the community at large, directed towards the prevention of tuberculosis on more scientific grounds. In this movement the Medical Officer of Health for Manchester (Dr. Jas. Niven) is one of the leaders. Among many other admirable suggestions he goes so far as to advocate compulsory notification of tuberculosis. But we, as medical officers of asylums, have no need to wait for such a thing before we can hope to cope successfully with tuberculosis. The individual units of the communities in our charge are under our constant observation in a way that is impossible in the world outside. The opportunities afforded us of detecting the *first* departure from physical health are such as might well cause the envy of the general practitioner.

Ought not these advantages to stimulate us to lead the van of scientific prophylaxis in this matter? Much has already been done, I know, in asylums in this direction. Can nothing more be done? In talking over this matter with an eminent member of our specialty he said to me: "The prophylaxis of tuberculosis in the insane may be summed up in one word, 'Ventilation.'" If this be true, if ventilation is to be regarded as the ultima thule of our aims and endeavours in this direction we find ourselves in the unfortunate position of those who have leaned too heavily on a slender support, and we must forthwith lay aside any hopes we may entertain of materially reducing the mortality from tuberculosis in our asylums.

Two years ago, in the Northumberland County Asylum, a system of ventilation was introduced at considerable cost, and in the confident hope of a lowered phthisical death-rate.

Have the results justified this hope?

The statistics, already mentioned, seem to me to afford conclusive evidence to the contrary, and I cannot believe ours to be a solitary experience.

In making these remarks I trust I shall not be taken to have in any sense a dislike to ventilation. On the contrary, for ventilation, as ventilation, I have the profoundest respect. I would like to see every asylum fitted with the most perfect of the many imperfect systems in existence, but for ventilation, as a preventive of the dissemination of tuberculous dust, I have but slight regard. And after all, the prevention of the dissemination of this deadly dust in the wards is the key of the situation.

In the autumn of 1893 an enquiry was instituted by the authorities of the *British Medical Journal* into the method adopted by the principal consumption hospitals in the kingdom for the limitation or prevention of the spread of the disease in their wards. In all cases the chief efforts were naturally directed to the prevention of the dissemination of tuberculous dust.

Of the many instructive suggestions to be gleaned from the report of this enquiry * one is compelled regretfully to face the fact that those which depend for their success upon the intelligent co-operation of the patients are likely to be of but slight service to us in the war we have to wage on a battle-field so much in favour of the foe.

Have we no weapon with which to fight? I think we have. It is powerful, but none too powerful for the work we wish to do.

If the prophylaxis of tuberculosis in the insane is to be summed up in one word at all, that word, I submit, is "*Isolation.*" That this subject is surrounded by difficulties could be denied only by the thoughtless or the ignorant, but difficulties have never prevented us in the past from doing our best for our patients and for the furtherance of scientific method.

Shall they deter us now?

It would be beyond the scope of this paper to do more than suggest the *principles* of a scheme of isolation of tubercular patients, which I believe would be applicable to all asylums. With the details, structural or otherwise, of the necessary isolation wards, it would be presumptuous of me to attempt to deal. They must of course be left in the hands of those Medical Superintendents who think it advisable to adopt this means of prophylaxis.

With regard to the few general principles of the scheme, by far the most important, and one I take it in which the entire value of isolation consists, is *early* and *absolutely accurate* diagnosis.

In the insane we have had in the past to rely for diagnosis, in the great majority of cases, upon physical signs, which, even in the sane, are unreliable, misleading, and frequently paradoxical in the early stages; often in fact until the disease is thoroughly established, and the value, therefore, of isolation largely annulled.

The cases among the insane in which the sputum can be

* *B. M. Journal*, Sept. 16th, 1893.

collected in the first or indeed in any stage, are so few that the valuable diagnostic method of microscopical demonstration of the bacilli is seldom possible.

The same remark applies to the method of diagnosis advocated by Professor Sheridan Délepine,* viz., inoculation experiments on guinea pigs with suspected sputum, or cultures therefrom.

Moreover, the length of time occupied by each experiment (an average of about 30 days—Arloing's† experiments give a still longer time) renders this unsuitable for our purpose.

The only method of *accurate* early diagnosis that I know of, is the subcutaneous injection of single minute doses of Koch's original tuberculin. With regard to its value I cannot do better, I think, than quote a short extract from Koch's latest paper describing his new tuberculin—T. R.‡ Referring to his original tuberculin brought out in 1890§ he says: "We know that tuberculin has the valuable property of producing a characteristic reaction in persons or animals tainted with tuberculosis when injected subcutaneously into the tissues. This property may be utilised to demonstrate the presence of tuberculosis in its earliest stages, that is to say at a time when physical signs are unreliable and when treatment would have the greatest chance of success.

"The diagnostic value of tuberculin, on which I laid great stress in my earliest communication on the subject, has received definite confirmation during the last few years. Tuberculin is at the present time used in the majority of civilised states for the early diagnosis of tuberculosis in cattle, and it is through its means that we are able to successfully combat this widespread disease. The thousands of injections of tuberculin performed on animals have shown how causeless was the fear that the tubercular reaction would stimulate the bacilli and lead to their dissemination throughout the tissues. This is fully in accord with my own observations extending over more than 1,000 cases in which tuberculin was used for the early diagnosis of tuberculosis in man. As a matter of fact, in not one of these cases could one ever demonstrate the least indication of the dissemination of the disease. These reasons should

* *B. M. J.*, Sept. 23rd, 1893.

† *Congres pour l'etude de la Tuberculose*, 1888, p. 404.

‡ *Deut. Med. Woch.*, April 1, 1897.

§ *Deut. Med. Woch.*, Nov. 14, 1890.

suffice to make us once for all abandon the absurd idea of the possible stimulation of the tubercle bacilli and should encourage us to apply tuberculin to the diagnosis of tuberculosis in the human subject.

"I can only repeat here, what I have before emphasised, that prophylaxis is infinitely more advantageous and efficacious than therapeutics."

It now merely remains for me to briefly indicate the plan I have adopted in the Northumberland County Asylum.

1. Every patient is carefully weighed at the beginning of each month.

2. The results are carefully inspected, and every patient who has lost more than 5lbs. in the month, or in whom gradual loss of weight over a longer period has occurred, is examined and the cause of loss of weight minutely enquired into. If this cannot be readily accounted for by some obvious mental or physical cause, such as refusal of food, &c., the patient's name is placed upon the "suspected" list. The same thing is done in the case of any patient giving at any other time the faintest cause of suspicion of the presence of tubercle.

All those on the suspected list are then injected with tuberculin in the following way:—

The temperature of these patients is taken.

The next day, with rigidly aseptic precautions, 1 c.c. of a .001 solution (made by diluting 1 c.c. of Koch's Original tuberculin with .5 per cent. solution of carbolic acid) is injected subcutaneously and the temperature taken every 3 hours. If the temperature rises 2° or more within the next 12 hours tubercle is diagnosed.

I have up to the present time injected 40 cases. Of these 18 were non-suspects, and were regarded as control experiments; in none of these was a reaction obtained. Twenty-two were "suspected" patients. Reaction was obtained in 15, and no reaction in 7. Of the 22 cases in which tubercle was suspected 4 were cases of enlarged cervical glands, in 3 of which suppuration had taken place. In all of these cases typical reaction took place.

Of the remaining 18 in which pulmonary tubercle was suspected, a typical reaction was obtained in 11. No reaction in 7.

Of the 11 reaction cases, definite physical signs in chest were wanting in 6 at the time of injection: suspicion being aroused by loss of weight (in some cases comparatively

sudden—in others more progressive), cough or emaciation (or the three combined).

Of the remaining 5 cases the various physical signs which are usually regarded as conclusive of tubercle in the lungs had already been discovered.

With regard to the subsequent history of the 11 reactions occurring in cases suspected of pulmonary tubercle, and speaking first of the 6 cases which presented no definite physical signs upon injection, one has died. Her lungs on post-mortem examination showed extensive tubercular apical destruction.

Two are rapidly going down hill with pronounced physical signs. Three have been so recently injected (24th July) that no change has taken place.

The five reactionaries in which it will be remembered definite physical signs, some of an advanced character of phthisis, were recognised before injection, I regard practically as control experiments at the other end of the line, showing indeed the accuracy of its action in the *tubercular*, just as the absence of reaction in healthy persons proved its absolute harmlessness in the *non-tubercular*.

Of the seven suspected cases in which injection produced no reaction, there is little to say about five of them, except that one has been discharged recovered, and that the other four have not as yet presented any further indications of phthisis.

The remaining two (a general paralytic and a chronic maniac) demand special notice inasmuch as they were both, at the time of injection, not only suspected of having phthisis, but its presence had previously been confidently diagnosed by two or three of my colleagues. So sure was I myself of the presence of tuberculosis, that I selected them as cases from which I was confident of obtaining typical reactions.

To my dismay and consternation no reaction was produced in either case, and I began to fear that perhaps tuberculin was not as diagnostically infallible as I had been led to believe. My relief was great when, on my return after a fortnight's absence, I learnt that post-mortem examinations in these cases had revealed patches of pneumonia, bronchial catarrh, and some pleuritic effusion, but no *tubercle*.

To the result of these experiments I have nothing to add, save the remark that tuberculin has been employed for the early diagnosis of tuberculosis in men and its use strongly

advocated for this purpose by Koch,* Dr. Springthorpe,† Dr. P. Krause,‡ and Dr. O. Maln.§

Discussion.

The CHAIRMAN said they were much indebted to Dr. France for the interesting facts he had brought before them. No doubt in the English asylums the great curse was tubercle. How the death-rate was to be diminished was a problem for the most serious consideration. Already they had, by improving ventilation, by heated dormitories, and by other means, endeavoured to make the lives of the patients more healthy, but, instead of getting a good result, they had got a worse result. He still believed that tubercle in asylums would in the long run be prevented. Last winter he amused himself by making experiments with regard to the ventilation at Morpeth Asylum, and was not at all satisfied with it. As they were aware, the question of the effect of bad ventilation was solved years ago at the Wellington Barracks in London, where the Guards were attacked in terrible proportions by tubercle. The ventilation was improved, and the disease disappeared. He was very much obliged to the reader of the paper for the notice he had given to the subject.

Dr. CLOUSTON said that his attention had been drawn thirty years ago to the excessive prevalence of tubercle in asylums then under his notice. He believed that where this was the case the food was less good than now, but that locality also exercised a definite influence. He remarked that it was found that the most heated asylums tended towards the increase of tubercle. In the Edinburgh Asylum they had reduced the average from 26 per cent. down to the present 13 per cent., and that, he believed, was mostly attributable to improved hygienic conditions. They could always keep this in mind, that the danger could be reduced by keeping the patients stout, strong, and fat, with plenty of exercise in the fresh air, but yet, with plenty of milk, eggs, and other good food, they found patients still subject to attacks of tubercle. With regard to prophylaxis, a great object should be the prevention of germ dust accumulation. Turpentine and wax were most beneficial in preference to the old system of scrubbing. The turpentine and wax application made a germicide which they, in their wards, had found most beneficial. No scrubbing was now allowed in any circumstances. He thought they should all commend the example set them by the Morpeth Asylum, by the injection of tuberculine for diagnosing the disease.

The CHAIRMAN said they thanked Dr. France very much for his paper, which no doubt would stimulate research.

Dr. FRANCE did not deny that tuberculine, as originally used in this country by way of experiment, did stimulate the disease it was supposed to check, but there was, he felt assured, not the slightest danger in the system adopted for diagnosing cases. He had never had a failure. There was no danger in using such a small dose as that which was used.

* *Loc. cit.*

† *B. M. J.*, July 7th, 1894.

‡ *Deutsche Med. Wochen.*, 1895, Nos. 6, 7 and 8.

§ *Centralblatt für Bakteriolog.*, xvii., 1895.

*The Normal Histology and Pathology of the Neuroglia (in relation specially to Mental Diseases).** By W. F. ROBERTSON, M.D., Pathologist to the Scottish Asylums.

It has long been recognised that the neuroglia presents difficulties of a very special kind in the way of its histological study. These difficulties are due mainly to the remarkable lack of affinity shown by its extra-nuclear part for the usual staining reagents. No histological method that has yet been described serves in a satisfactory manner for the complete investigation of this tissue in its normal and pathological states. The most generally serviceable at present in use is, I think, beyond all question the fresh method of Bevan Lewis. It at least furnishes us with a reliable test for the presence or absence of hypertrophy and sclerosis; but it does not give a complete or clear view of the normal tissue, the fibres remaining for the most part invisible (except in tissues from some of the lower animals), and the nuclear structure being quite obscured. Golgi's method gives us only a silhouette of a small proportion of the neuroglia-cells and fibres. It does not aid us in the solution of questions regarding nuclear and protoplasmic structure. Weigert's new method gives us a very clear view of the fibres and nuclei, but it leaves the protoplasm invisible in the normal state. Its chief deficiency, however, consists in the fact that its use is restricted to the fresh human brain. It is of little value for ordinary post-mortem-room tissues, or for those of the lower animals. Other methods that might be mentioned are likewise imperfect in their results, or extremely limited in their utility. In these circumstances it is scarcely surprising that there is still the widest difference of opinion among the recognised authorities regarding the normal structure of the neuroglia. Yet until this question is carried beyond the stage of controversy it is obvious that all our views of the pathological changes occurring in the supporting tissue of the central nervous system must remain vague and unscientific.

I have for some time past been making a special study of the neuroglia, and have endeavoured to bring some new light to bear upon this vexed question of the normal histology. I have devised and made extensive use of a new

* Read at the Annual Meeting of the Medico-Psychological Association Newcastle, and illustrated by a microscopic demonstration.

histological method for the nervous system, which, though by no means in all respects satisfactory, yet is, I think, capable of giving a better view of the neuroglia than any other method at present in use. Although the same dye is used, the method is essentially different from that of Weigert. It is applicable to tissues from the lower animals as well as to those from the human subject. Like Weigert's method, it succeeds only upon tissues that are moderately fresh, but this is a defect which must pertain in some measure to every method for the neuroglia on account of the extreme susceptibility of this tissue to post-mortem change. Consequently it is only occasionally successful with the healthy human brain. It may be depended upon, however, to give good results in almost every case in which the neuroglia is in the least degree hypertrophied. It is in no sense a selective staining method such as Weigert's is claimed to be. When successful it simply gives preparations in which the neuroglia is stained along with the other tissue elements. With tissues fixed in corrosive sublimate it gives a very clear view of the chromophile elements of the protoplasm of the nerve-cells, and also of the structure of the nucleus. A description of this new method will be found appended to this paper.

I shall take up *seriatim* the subjects of the development of the neuroglia, its normal histology and functions, reaction to irritants, its rôle in processes of repair, and lastly the pathological changes to which it is subject, more especially in insanity.

Development.—As the result of observations on the spinal cord of the chick, Golgi pointed out in 1885 that at an early stage of development the supporting tissue of the central nervous system consists solely of the epithelial cells lining the neural canal, together with certain processes radiating from them, and terminating immediately below the pia mater. He maintained that the neuroglia is developed from these cells, and that it is therefore entirely epiblastic in origin. The observations of numerous other workers have since confirmed and elaborated this view, which has now the support of such authorities as Ramon y Cajal, Lenhossék, Weigert, and Schäfer. A very full account of the whole subject will be found in the recent work of Lenhossék,* whose own histological contributions to this elucidation are probably the most important that we have. So clearly has the

* *Der feinere Bau des Nervensystems*, Berlin, 1895.

process of the development of the neuroglia been traced by these and other observers that it must be maintained that the question is one that has now been finally settled. We can only regard as erroneous the views of those who still adhere in any form to the older theory of the mesoblastic origin of the neuroglia. This applies, for example, to the views of Andriezen,* according to whom the neuroglia contains two different kinds of cells, one of which is mesoblastic and the other epiblastic in origin; and also the recently expressed opinion of Bevan Lewis† that the neuroglia-cells all arise “from endothelial elements of the blood-vessels.”

Normal Histology.—I shall not attempt to give here a full historical sketch of the various opinions that have been advanced regarding the normal structure of the neuroglia since its discovery by Virchow in 1846. They may be classified into four groups, of which I shall merely state the main features.

Firstly, there is the view originally advanced by von Kölliker in 1862, which has since been supported with various non-essential modifications by Deiters, Golgi, Ramon y Cajal, Lenhossék, Van Gehuchten, Schäfer, Pellizzi and many others. According to the more recent of these authorities the neuroglia is composed entirely of small cells provided with very fine, wavy, and only slightly ramified processes, which terminate freely or attach themselves to walls of the vessels. There are no independent glia-fibres, and no glia-cells without processes.

Secondly, there is the view first advanced by Ranvier in 1883, and recently strongly advocated by Weigert‡ as the result of observations with his new method, according to which the neuroglia is composed of nucleated cells and of fibres which are chemically distinct and morphologically separate from the protoplasm of these cells. Weigert further maintains that the neuroglia fibres have no vascular or other attachments, and that they never branch.

Thirdly, there is the view of Bevan Lewis,§ according to which the neuroglia contains two different kinds of cells—a small element without processes, and a larger element which has a comparatively faintly staining nucleus and is

* *Brit. Med. Journ.*, July 29th, 1893.

† *Edin. Med. Journ.*, June, 1897.

‡ *Beiträge zur Kenntnis der normalen menschlichen Neuroglia*, Frankfurt, 1895.

§ *Text-Book of Mental Diseases*, 1889, p. 79.

provided with numerous delicate processes, one or more of which are attached to the wall of a vessel. This authority further believes in the existence of a structureless, or finely molecular basis-substance belonging to the neuroglia.

Lastly, there is the view of Andriezen,* who says that the neuroglia is to be classified into two component cell-elements, namely "neuroglia fibre-cells" and "protoplasmic neuroglia-cells." As already mentioned, he believes that these two forms of cell are developed from different blastodermic layers.

There can be no doubt that the great preponderance of authority rests at the present time with the first of these views. Nevertheless the influence of Weigert's recent monograph has been widely felt, and there are probably many who, like the French authority Dagonet,† have at once accepted his teaching. As far as I know, Pellizzi ‡ and myself are the only persons who have as yet endeavoured to show the fallacy of Weigert's contentions since the publication of his monograph. Pellizzi argues that a chemical differentiation between fibre and protoplasm of the kind displayed in preparations by Weigert's new method does not suffice to prove that these elements are anatomically separate. He has observed that this fine differentiation is not maintained when these structural elements enlarge in morbid conditions, and he maintains that other methods clearly demonstrate that the fibres are processes of the cell protoplasm. Since the publication of my own note on this subject in the *Journal of Mental Science* of January last, I have, I think, obtained new and important evidence upon this question through the employment of the new method to which I have already alluded. The study of preparations by this method has served to convince me more thoroughly than ever that those authorities are right who have contended that the neuroglia is composed essentially of only one form of tissue, namely, branching cells. I think, further, that Bevan Lewis and Andriezen are in error in distinguishing two separate kinds of neuroglia-cell. It can be shown by the new method that the great majority of the small cell-elements of Bevan Lewis have very fine fibres radiating from them, and therefore resemble his larger cell-element. The difference is only one of size. The nuclei of

* *Brit. Med. Journ.*, July 29th, 1893.

† *Annales Médico-Psychologiques*, 1896, p. 313.

‡ *Rivista sperimentale di freniatria*, 1896, p. 466.

the small cells appear darker than those of the larger cells merely because their chromatic filaments are relatively more abundant. The protoplasmic neuroglia cells described by Andriezen have long been recognised. They are not artefacts resulting from the irregular deposit of reduced silver, as some have suggested, for they are shown by Cox's method as well as by the chrome silver process, and they are also easily distinguished in some preparations by the new methyl violet method. I think it can be proved that they are merely, as Weigert has suggested, neuroglia-cells at a certain stage of growth. Their rôle in physiological and pathological processes will be further considered presently.

The most difficult point to decide about the structure of the neuroglia is the relation of protoplasm and fibre. Weigert believes that they are entirely separate; the great majority of other authorities maintain that they are continuous. It seems to me that neither of these views is quite accurate. Indeed, the true relationship of protoplasm and fibre appears not yet to have been grasped by any of those who have studied the histology of the neuroglia, except it be by Pellizzi, who, however, has done little more than suggest it. This authority says that the prolongations probably represent a product elaborated in the protoplasm, probably of the nature of neurokeratin. Whether the fibres consist of this substance or not must be regarded as doubtful, but there can be no question at all that they are products of the protoplasm of a highly differentiated kind. Indeed, I think that this fact is the key to a proper conception of the structure of the neuroglia. All the stages in the elaboration of neuroglia fibres may be observed in brain tissue which is undergoing sclerosis. When neuroglia cells are proliferating rapidly they are swollen to several times their usual size, and present numerous thick processes which often branch dendritically. Now in the case of such cells there can be absolutely no question that the processes are true prolongations of the perinuclear protoplasm. No staining method will show any differentiation between them. They are structurally identical as well as anatomically continuous. When proliferation ceases the cells gradually shrink to their usual dimensions. This shrinkage is associated with the occurrence of a peculiar change at the edge of the protoplasm, consisting in the formation of a substance which shows a special affinity for

methyl violet in preparations by Weigert's method and by the new method. It is in the processes and along the sickle-shaped edges of the protoplasm uniting adjacent processes that this transformation manifests itself. Processes may be seen which are only partially modified in this way, presenting often, when flattened in form, two deeply stained edges with faintly stained protoplasm between. Other processes may be observed which are entirely modified, but as they reach the vicinity of the nucleus they generally divide into two branches which turn in opposite directions, and run along the sickle-shaped edges of the perinuclear protoplasm, each becoming continuous with another similar process. One of these two branches is often much thinner than the other, and apparently frequently undergoes atrophy.

All neuroglia-cells must have passed through a purely protoplasmic stage in the course of their development. The fibres are formed subsequently, being elaborated from the protoplasm, of which they may be regarded as a sort of condensation product. In the fully developed human brain generally only a very small amount of undifferentiated protoplasm remains around the nuclei of the neuroglia-cells. It forms a thin layer filling up the spaces between the fibres and the nucleus. The study of the neuroglia of the sheep proves that the transformation may, however, go further than this. Many of the neuroglia-cells of this animal are absolutely devoid of any protoplasm that can be demonstrated. It is probable that in the human subject the protoplasm of many of the neuroglia-cells has also become completely differentiated into fibres.

Now the crucial point is, Are we to believe with Weigert that the anatomical continuity between the fibres and the remaining undifferentiated protoplasm, or between the fibres and the nuclei, is entirely lost or not? In other words, Are the fibres merely leaning against the cell-body, or are these two elements still in essential union with each other? It seems to me that this is a question that can never be definitely decided one way or the other by the mere study of the forms and relations of the elements concerned. A differential staining of tissue elements lying in contiguity cannot be admitted as proof of their discontinuity. Weigert's case rests almost entirely upon such evidence and therefore it cannot be allowed that it has been proved. Upon such evidence we might, for example, with equal justice maintain

that the deeply stained nuclear membrane of the neuroglia-cells has no connection with the invisible nuclear matrix. On the other hand the mere contiguity of two tissue elements which can be clearly differentiated by a staining reaction does not suffice to prove that they are anatomically continuous. Therefore we must seek for evidence of some other kind to decide this question. We require in fact evidence that will determine whether fibre and cell are in physiological union or not. Now I think we have strong affirmative evidence upon this question in the fact that in the fully developed brain Golgi's method picks out only an occasional neuroglia-cell along with all the processes radiating from it to the exclusion it may be of all adjacent interlacing fibres radiating from other neuroglia-cells. But still more decisive evidence can be obtained from the observation of the changes that take place in the neuroglia in certain pathological conditions. It may sometimes be observed that certain of the neuroglia-cells have undergone marked hypertrophy while others remain unchanged. Now it is never merely a nucleus and its immediately surrounding protoplasm that become thus enlarged. All the fibres that radiate from the cell undergo hypertrophy simultaneously, often to the entire exclusion of hypertrophy in neighbouring interlacing fibres. Therefore, I think, we are bound to believe that these hypertrophied fibres were in essential union with that cell.

On these grounds I think we are justified in maintaining that the view of the structure of the neuroglia held by Golgi, Lenhossék and others, is essentially correct, although its advocates have not fully realised the highly differentiated character of the fibrillar processes. To establish this important anatomical fact has been the great service of Weigert's work.

I do not think, however, that any sufficient evidence has yet been adduced by the supporters of Golgi's view in proof of their contention that the neuroglia consists *entirely* of such branching cells. These cells vary greatly with regard to their size and the number of their processes. Now it may be asked, on the one hand, Does the series end with small cells which have only two or three delicate fibres connected with them? I have endeavoured to satisfy myself upon this question, but I have found it one of great difficulty on account of the impossibility of being sure that all the fibres are really stained. On the whole I think it is probable that in the human subject and also in the lower animals there is a small

proportion of cells belonging to the neuroglia, the protoplasm of which has undergone no differentiation into fibres. Their protoplasm appears to be somewhat scanty, and to assume various shapes, often being stellate. These fibreless neuroglia-cells do not correspond to the small cell-elements of Bevan Lewis, which are far more numerous, and which can be shown to have fibrillar processes in the great majority of instances. There is no reason to believe that they are essentially different from other neuroglia-cells. They have simply not been called upon to produce fibres. They must be regarded as potentially fibrillated cells, being capable of hypertrophying, proliferating and elaborating fibres in the same way as other glia-cells.

On the other hand it may also be asked, Do any of the neuroglia-fibres become completely separated from the perinuclear protoplasm, assuming an independent existence like the fibres of ordinary connective tissue? This again is an exceedingly difficult problem to solve. In the present state of our knowledge we cannot entirely deny that such a separation sometimes takes place; but I think that we are in a position to assert positively that the immense majority of neuroglia-fibres do not reach an independent stage. It seems very probable that neuroglia-fibres are incapable of an independent existence, union with the cell being essential for the continuance of their nutrition.

Another point that I wish to make clear is the explanation of the recurving fibres in the vicinity of the neuroglia nuclei in preparations by Weigert's method. I have already dealt with this point at some length in the note in the *Journal of Mental Science* of January last. The results obtained with the new method have since made the matter much clearer to me. If we keep in view the facts that the fibres are a product of the protoplasm, and that any undifferentiated protoplasm that remains is invisible in Weigert's preparations, it is easy, I think, to understand the appearances in question. The arrangement of the fibres corresponds in a general way to the original outline of the neuroglia-cell in its protoplasmic stage. Therefore, we should expect to find that a fibre as it approaches the nucleus divides into two branches which curve round in opposite directions and join adjacent fibres. Now this is exactly what we find in a great many instances. Indeed, all the fibres radiating from a cell may often be observed to be thus continuous with each other. This bifurcation of the fibres

as they approach the cell is a phenomenon that appears to have escaped Weigert's notice. It is by no means, however, a constant appearance in his preparations, for, as I have already stated, one of the branches frequently atrophies; or sometimes one of them is so delicate that it does not retain the stain. The appearance of a single recurving fibre is thus produced. Another reason why this bifurcation of the approaching fibre is not always easy to recognise is that it occurs frequently at a point at which the original protoplasmic process divided into two delicate branches. Appearances are thus produced which Weigert has interpreted as the crossing of two independent fibres. In many instances at least this interpretation is, I think, erroneous, the four fibres being really continuous. The space between the nucleus and the fibres may be filled up with undifferentiated protoplasm, which in the angles made by adjacent fibres takes the form of a thin layer. But frequently, owing either to the contraction produced by the hardening agent, to further fibrillar transformation, or to shrinkage from other causes, the protoplasm has disappeared from parts at least of the intervening space. If we take the view that the fibres are a product of the protoplasm it will no longer be accurate to regard recurving fibres as consisting of two fibres joined by an envelope of the cell-body as was done in the note already referred to. The whole fibre is really a portion of a protoplasmic envelope of a highly specialised kind.

In a very similar way Weigert has, it seems to me, been misled by his method with regard to the attachment of certain of the fibres to the walls of the vessels. He denies that such an attachment ever occurs. Now the new method shows very clearly, I think, that many of the fibres are attached to the walls of a vessel by an expansion which is not cone-shaped as has been thought, but fan-shaped. The fibre appears to bifurcate at the apex of this triangular expansion, the branches forming two sides of the triangle, the vessel wall the base. One of these branches is generally thinner than the other, and is consequently often not stained in preparations by Weigert's method. The triangular space is filled up with a very thin layer either of undifferentiated protoplasm, or, more probably, of material of the same kind as the fibre, which remains quite invisible in preparations by Weigert's method, but is distinctly shown in those by the new method. Thus all that is seen in the former is

generally a single fibre curving round until it runs for a short distance parallel with the unstained and only imperfectly discernible vessel-wall. The use of the new method is by no means essential for the detection of these fallacies. They are, I think, evident in many preparations by Weigert's own process.

To sum up, I would describe the normal neuroglia of the fully developed human brain as consisting essentially of special highly branched cells which vary greatly in size and in the number and arrangement of their processes. Their nuclei are oval or rounded in form, have a prominent nuclear membrane and chromatic filaments distributed evenly throughout the nuclear matrix. Their protoplasm, originally large in amount, has become in greater part differentiated into a denser substance which forms fine fibres. In some instances it would appear to be entirely so differentiated. But the fibres remain in anatomical and physiological union with the cell-body. They do not end in it, but passing over it are continued beyond it. As they pass out from its vicinity two of them frequently join to form a single fibre. This almost immediately beyond the point of junction occasionally divides into two. These structural features are the result of the mode of development of the fibres. At a greater distance from the cell the fibres seldom branch and never anastomose. In the sheep, on the other hand, branching is common. Neuroglia-fibres are not hollow tubes as some have thought, but are solid in structure. They are probably smooth, but we cannot at present assert this absolutely, owing to their somewhat rough aspect in some preparations by Golgi's method. They are straight or gently curved. They differ greatly in length and considerably in size, but individual fibres remain of about the same thickness throughout their course. Many of them are attached to the adventitia of the vessels, either directly or by means of fan-shaped expansions. Others probably end freely, although the proof of this is wanting. Whether or not the fibres are attached to the nervous elements is not as yet satisfactorily determined. A small percentage of neuroglia-cells probably remain of which the protoplasm has not undergone any differentiation into fibres. On the other hand it is possible that some fibres become entirely separated from the cells, and assume an independent existence, but there are strong grounds for believing that this does not occur. It certainly does not take place to any great extent.

The neuroglia-cells are most abundant in the white matter of the brain, in the first layer of the cortex, below the epithelium of the ventricles, and around the larger vessels. The largest and most richly branched forms occur also in these situations, but more especially immediately below the pia-arachnoid and epithelium of the ventricles, where their fibres form a delicate felt-work. This felt-work can frequently be recognised in fresh aniline black sections of the normal human brain, and must not be mistaken for sclerosis. It becomes more distinct as age advances. The direction in which the fibres radiate depends entirely upon the arrangement of the adjacent tissues, to which the fibres have to accommodate themselves, and there seems therefore to be no justification for making this feature a ground for classification of neuroglia-cells as some authorities have done. Immediately subjacent to the pia-arachnoid the fibres naturally either run parallel with the membrane, or stream down into the cortex. Around the larger vessels they must have a corresponding arrangement. In general they radiate from the cell-body in all directions.

I think it is worth advancing as a theory that the great difference in the size of the neuroglia-cells is in some way related to the circumstance that, like most other cell-elements, they have only a limited existence, and require to be slowly renewed. In the brain of the fully-grown healthy sheep there is strong evidence that a small percentage of the neuroglia-cells are proliferating. It may be regarded, I think, as certain that the neuroglia-cell only lives for a limited number of years, and that therefore a slow process of regeneration must be continually going on. This being so, there must be a cycle in the life-history of a neuroglia-cell, and it is conceivable that cells of different sizes represent different stages in this cycle.

Functions of the Neuroglia.—Regarding the functions of the neuroglia I think there are only two that can be looked upon as clearly established. Firstly, the neuroglia gives mechanical support to the neighbouring delicate tissues, especially to the nerve-cells and their prolongations. The attachment of the neuroglia-fibres to the capillaries and larger vessels, which probably occurs to a much greater extent than has generally been believed, is essentially related to this function. The great internal supporting frame-work of the brain is obviously the network of vessels that permeates it. The finer supporting frame-work is the

neuroglia. The neuroglia-fibres are guyropes for the capillaries, and at the same time supports for the nerve-cells and their prolongations.

Secondly, the neuroglia is the tissue of repair in the brain. In this respect it corresponds exactly to the white fibrous tissue in other parts of the body.

I believe that authorities are pretty generally agreed regarding these two functions of the neuroglia. Of the additional functions that have been attributed to it, some, I think, are uncertain, others are erroneous. In the former category I should place Ramon y Cajal's theory that the neuroglia serves to isolate nervous conduction in medullated nerve-fibres; and the theory of Golgi, Clouston, and others, that it fulfils a nutritive function in relation to the nerve-cells. In the latter category I think we must place Bevan Lewis's theory that certain of the neuroglia-cells constitute the distal expansion of a lymphatic system serving to drain the intervascular area. Solid fibres cannot possibly perform any such function; and, further, provision of this kind for drainage of the intercapillary areas appears superfluous, as it is certain that for this purpose there exists an efficient arrangement of the usual kind, or at least differing only slightly from that in other tissues. Nor can we, I think, accept Bevan Lewis's theory that hypertrophied neuroglia-cells act as phagocytes. This theory has found little or no support among other authorities. I think it is founded on a misinterpretation of microscopic appearances, and on a misconception of the true meaning of neuroglia hypertrophy.

The Reaction of the Neuroglia to Irritants.—The Rôle of the Neuroglia in Processes of Repair.—Our knowledge of the reaction of the neuroglia to irritants is as yet far from being so precise as it is desirable that it should be. The experimental work of Friedmann,* Goodall,† and some others, though of much value, has by no means served to solve all the problems connected with this subject. Further careful research along similar lines is still required before we can be quite certain as to the true interpretation of many of the proliferative phenomena that occur in the brain in disease. As far as we understand them at present the effects of the application to the neuroglia of an irritant of a suitable kind and intensity, are as follows. The cells

* *Arch. f. Psychiatrie*, 1890, Bd. xxi., p. 461.

† *Jour. of Pathology and Bacteriology*, 1894, Vol. ii., p. 395.

along with the fibres that radiate from them swell up often to several times their usual dimensions, displaying at the same time a greatly increased affinity for various stains. Goodall found this condition established to a marked degree after 28 hours. This great hypertrophy of the neuroglia-cell is merely the first stage in the process of its proliferation. Several observers have noted that this takes place by the indirect method. Friedmann observed karyokinetic figures in the nuclei of the neuroglia on the third day after the application of irritants, but it seems probable that the cells may begin to divide at a much earlier period than this. The daughter cells increase in size, and in their turn may divide into two. The fibres in swelling up gradually return more or less completely to their original protoplasmic character. As proliferation continues new processes are thrown out from the protoplasm. These are at first dendritic in form. They tend to attach themselves to neighbouring vessels. Some time after the irritant ceases to act the proliferated cells begin to diminish in size. This change, which is a very slow one, is associated with partial differentiation of the protoplasm into fibres, as already described. Probably each dendritic process becomes converted into several plain processes by gradual splitting at the forks down to the close vicinity of the nucleus. After some weeks all the proliferated cells have again assumed normal dimensions. The area involved is now one of sclerosis. This, in the case of the nervous system, implies increase in the number of neuroglia-cells, and especially of their fibrillar prolongations, which are usually less delicate than in the normal tissue.

In simple processes of repair in the central nervous system, as after the occurrence of a small hæmorrhage, or of the degeneration of nerve fibres, phenomena of essentially the same kind take place in the adjoining neuroglia. In other words it undergoes hyperplasia and replaces the tissue that has been destroyed. In the case of large destructive lesions this only occurs, however, at the periphery, the centre developing into a cyst.

A noteworthy feature of neuroglia sclerosis is that it is associated with little or no contraction of the area involved. The great importance of this is obvious. If repair had taken place in the brain by means of the formation of ordinary granulation tissue, it would have been associated in its later stages with much contraction, which would

inevitably have implicated a wide area of surrounding nervous tissue with the most disastrous consequences.

Hypertrophy and Hyperplasia of the Neuroglia in Disease.—It has long been recognised that these hypertrophic and sclerotic changes are specially common in the brains of the chronic insane. It is well known also that they occur in the neighbourhood of gross lesions such as softenings, localised centres of inflammation and tumours. In any case in which they can be proved to be the result of the action of an irritant we are warranted in regarding them as inflammatory in character. But as changes which, as far as we know, are of exactly the same kind, may occur purely as a physiological process of repair, for example after degeneration of medullated nerve fibres, we are not justified in regarding neuroglia hypertrophy and sclerosis as in themselves proof of inflammatory action. Probably at some future time we shall be able to distinguish between an inflammatory and a purely reparative hyperplasia of the neuroglia; but in the meantime we must often be content to remain in doubt as to the essential character of these tissue changes.

It seems certain that a considerable degree of neuroglia hypertrophy may occur and remain as a chronic condition without proliferation taking place to any great extent.

A morbid degree of subpial felting is sclerosis affecting the thick layer of neuroglia that normally occurs immediately subjacent to the soft membranes. Some microscopic specimens of such morbid felting furnish strong evidence that the fibres composing it are all processes of cells and never independent threads. Although contrary opinions have been expressed, it seems now pretty well established that granulations of the ependyma are essentially localised overgrowths of neuroglia.

Neuroglia hypertrophy and hyperplasia may be either primary morbid factors, or merely secondary pathological changes. In every case in which they are due to an irritant which does not seriously affect the nervous elements, it is clear that they must in themselves do injury to these nervous elements. In such cases they are primary morbid factors. On the other hand, when they are simply the expression of a reparative process following loss of the nervous elements, they are secondary pathological changes. We are scarcely yet in a position to say to what extent these neuroglia changes as they occur in insanity are in this sense

primary and to what extent they are merely secondary. They are always, however, a most important index of the amount of degeneration affecting the proper nervous elements.

It is a remarkable and important fact that the neuroglia is capable of thriving under abnormal nutritive conditions which quickly result in death of the nervous tissues. Thus if a cerebral capillary is rendered impervious by hyaline change, the adjoining nerve-elements die, but the neuroglia hypertrophies and proliferates.

Pigmentation of Neuroglia-Cells.—There is another common morbid condition which occurs very frequently in the brains of the insane, the nature of which has hitherto, I think, been misinterpreted. The change referred to consists in the accumulation in and around the protoplasm of the neuroglia-cells of small homogeneous globules of a yellow tint. It is most commonly seen in its extreme degrees in the outermost layer in senile insanity. Sometimes the globules are so numerous that they almost completely obscure the body of the cell. There is little difficulty in recognising that they are not colloid bodies. Bevan Lewis has figured them and has stated that they are fatty in character. While I sincerely regret to have to differ so frequently from one who has done so much to advance our knowledge of the pathology of insanity, I am obliged to say that I think this view is incorrect. These globules are insoluble in ether, and they are not blackened by the prolonged action of osmic acid, and therefore they are not fatty in character. Whatever their chemical nature may be, I think there is the strongest evidence for believing that they are developed within the protoplasm of the neuroglia-cells, from which they are thrown out as they accumulate. They are composed of some very insoluble substance which the leucocytes appear to be unable to carry away. They are specially the product of chronically hypertrophied neuroglia-cells, and may be seen wherever these occur. They are by no means confined to the outermost layer of the cortex. They form to some extent in normal senility. I think that this morbid change might be designated *pigmentation of the neuroglia*, or *pigmentary degeneration of the neuroglia*.*

A peculiar swollen, blurred condition of the cell-body of otherwise normal or slightly hypertrophied neuroglia-cells may occasionally be seen in fresh sections. I think it

* The paper was only read to this point.

can be shown that this is not always a mere post-mortem change, but that it may be a true pathological condition, the nature of which, however, is still obscure.

Changes affecting the Neuroglia in some of the more important forms of Insanity.—My conclusions on this subject are based upon the study of fresh sections of the cerebrum from 300 consecutive cases of insanity examined at the Royal Edinburgh Asylum and of 28 cases of other diseases from general hospitals. For some of the preparations in the latter series, I am indebted to Dr. Robert Hutchison.

General Paralysis.—The great neuroglia hypertrophy and proliferation—involving the whole of the cortex as well as the white matter—regarded by some authorities as typical of this disease in its advanced stage, I have only found in about one-third of such cases, of which I have examined sixty-four. A much less marked degree of these morbid changes was present in the large majority of the cases. They were further often confined to the outermost layer of the cortex and the white matter. When the deeper layers of the cortex were involved large areas usually remained unaffected. Several patients who clinically were beyond any doubt advanced general paralytics showed no pronounced neuroglia change at all. In three additional early cases the neuroglia was either normal, or only very slightly hypertrophied in the outermost layer of the cortex and in the white matter. These observations lead me to support the views of those who have already maintained that hypertrophy and hyperplasia of the neuroglia are secondary and non-essential tissue-changes in general paralysis.

Senile Insanity.—In senile insanity there is almost constantly a pronounced degree of hypertrophy and hyperplasia of the neuroglia in the outermost layer of the cortex, along with a more or less thick band of subpial felting. In more than half of the cases there is general neuroglia hypertrophy in the white matter. It is, however, usually slight in degree. In the cortex subjacent to the outermost layer hypertrophy and sclerosis almost never occur as general conditions, but they are common in connection with atrophic softenings, which may be extensive or quite microscopic in size. Such areas are also common in the white matter. The hypertrophied cells, especially in the outermost layer of the cortex, always show pigmentation, which is frequently developed to an extreme degree.

Chronic Alcoholic Insanity.—The neuroglia changes here

closely resemble those in senile insanity. Pigmentation is usually comparatively slight. The limitation of a marked degree of hypertrophy to the outermost and the deepest layers of the cortex is much more common in this form of insanity than in any other, but the condition can be demonstrated in only a minority of cases. A similarly limited distribution of hypertrophy not infrequently occurs in general paralysis and in senile insanity. Areas of atrophic softening in the cortex or in the white matter, with their associated neuroglia hypertrophy and sclerosis, are common, but much less so than in senile insanity.

Chronic Epileptic Insanity.—A very dense and broad layer of subpial felting is present in the majority of cases. This fact has been noted by many observers. I think that the change is clearly a secondary one, and that it has no essential connection with epilepsy. In a large proportion of cases the condition does not occur. A slight degree of hypertrophy and sclerosis is present throughout the first layer of the cortex and in the white matter in the majority of cases. This condition, however, is in no sense special to epilepsy. It is the rule in all cases of insanity of long standing. In only one case out of thirteen did I find sclerosis of the cornu Ammonis, but the condition was merely a part of a somewhat marked degree of general sclerosis throughout the white matter of the brain. There were extensive areas of dense sclerosis in the cerebrum in five cases. Without going into the difficult questions of the pathology of these areas and their relation to epilepsy, I would merely state that observation proves that while such lesions very commonly occur in cases of congenital epileptic idiocy and imbecility, they are by no means an essential factor in the pathology of these conditions, being frequently entirely absent; and that on the other hand they may be present in cases of acquired epilepsy in which there was no prior condition of congenital imbecility.

Cases of acute insanity as a rule show no important morbid changes in the neuroglia.

Miliary Sclerosis.—A paper on the pathology of the neuroglia, even though dealing only with changes occurring in the cerebral hemispheres, would probably be regarded as incomplete without some reference to this subject. I shall only very briefly state the views that my own observations have led me to form upon it. In the course of the study of over 300 morbid brains I have never met with a pathological

condition corresponding to that which has been described as "miliary sclerosis," and I venture to maintain—as others have already done—that the appearances described under this name have to a large extent been misinterpreted, and that no such disease ever occurs. In the first place we must separate off from "miliary sclerosis" all cases of disseminated sclerosis, which is a disease of youth and middle-age and somewhat rare in its occurrence, while "miliary sclerosis" has been described as an "all-important feature in the white medullated strands of the cerebral convolutions in chronic alcoholism and especially in senile atrophy of the brain." Now in these forms of mental disease small sclerosed areas undoubtedly occur with some frequency both in the cortex and in the white matter. But they differ considerably in appearance from "miliary sclerosis," and they never occur in the multiple fashion that has been stated to be typical of this disease. At the same time multiple areas having appearances identical with or closely resembling those described as characteristic of "miliary sclerosis" are common in my experience both in fresh and hardened brain-sections, but I think that in the great majority of instances they are not morbid areas at all. My belief with regard to the matter is that while some of the areas described as "miliary sclerosis" have been genuine atrophic areas with neuroglia sclerosis, the great majority of them are to be explained chiefly in the following ways:—(1) In hardened preparations some of them are produced by post-mortem change; others result from the action of alcohol on imperfectly fixed myeline; and (2) in fresh sections some of them are due to post-mortem change; some result from the formation of minute air bubbles in the sections before or during the process of staining; and lastly some are produced by the falling out of small vessels, the tissues in the immediate vicinity of which in cases of senile insanity commonly show a slight degree of sclerosis.

Author's Methyl Violet Method for the Central Nervous System.—The following description must be regarded in the light of a preliminary note, as my own experience of the method extends over only a few months, and as I have obtained numerous irregularities in the results which I cannot yet fully explain. The question of the hardening processes most suitable is one that is still under investigation. The two recommended here are those that have as yet been found to give the best results.

Hardening.—(a.) For the study of the nerve-cells. Fix very thin slices of tissue in saturated solution of corrosive sublimate in .5 per cent. salt solution (Heidenhain) for twenty-four hours. Wash shortly in water. Place for twenty-four hours in 80 per cent. alcohol to which has been added a sufficient quantity of alcoholic solution of iodine to give it a dark sherry colour. Change to methylated spirit (or alcohol of corresponding strength) with a similar quantity of iodine added. After twenty-four hours transfer to methylated spirit without iodine. (b) For the study of the neuroglia. Fix and harden as above; or in 5 per cent. formalin in water.

Cut sections preferably by the freezing method. It is essential that they should be very thin.

Staining.—Transfer the sections from alcohol to 1 per cent. methyl violet in water. Allow to stain for five minutes or longer. Wash shortly in water. Place in saturated solution of iodine in $2\frac{1}{2}$ per cent. potassium iodide for ten minutes (half to one hour or even longer for formalin-hardened tissues). Wash sections in water. They may remain in this for an hour or so without suffering harm. Take a section up from the water on a perfectly clean slide. Carefully remove water from around it by means of a towel. Next with a piece of smooth-surfaced blotting-paper (folded double) blot the section in the same way as one blots a sheet of wet manuscript. Immediately afterwards, without allowing the section to dry in the air, pour over it some drops of pure turpentine. Origanum and bergamot oil may also be used; most other volatile oils dissolve out the dye. Place the slide upon a hot plate and thoroughly dehydrate the section at a temperature not exceeding about 80° C. Do not allow the turpentine to dry off the section. When dehydration is complete the previously black and opaque tissue assumes a dark blue and faintly translucent appearance. Generally from five to ten minutes are required. When the section seems dehydrated remove the slide from the hot plate, allow it to cool, and then pour off the turpentine. Decolourise with aniline-xytol (1 in 4). The aniline oil must be perfectly anhydrous. Renew aniline-xytol two or three times. When colour ceases to come out, wash the section with several changes of pure xytol, and mount in balsam in xytol.

Note.—The iodine solution does not act as a decolourising agent, but as a fixative of the dye. It is essential that the

section should be completely dehydrated. Any spot in which moisture has been allowed to remain will be almost completely decolourised by the aniline-xylol. If staining is too deep shorten the time in methyl violet; if too faint lengthen the time in the dye, and also in the iodine. The action of the latter cannot, however, be prolonged with advantage if diffuseness of staining is shown in the sections.

Discussion.

The CHAIRMAN said he was sure they were all grateful to Dr. Robertson for his paper, representing as it did such a large amount of honest work and research.

Dr. B. PIERCE joined in thanking Dr. Robertson for his paper, and also Dr. Campbell and himself for those beautiful specimens which they had shown.

Dr. W. A. CAMPBELL said he had never made any special study of this important constituent of the nervous system. He must say, however, that the publication of the view that the neuroglia-fibres did not form an integral part of the neuroglia-cells was an extraordinary one. Although it might seem presumptuous on their part to criticise the work of such an excellent authority as Dr. Weigert, yet it did seem to him (Dr. Campbell) that his method had misled him, and that the observations of Dr. Robertson afforded a much more correct view. His own opinion was that the fibres are united with the protoplasm.

Dr. CLOUSTON said that one aspect of such a paper was this: he thought it was of the utmost importance that they should get a fairly vivid conception of the architecture and constitution of the brain cortex in their own minds, and the only way to do this was to have a specialist, like Dr. Robertson, who would take one constituent at a time and give them, as he had given them that day, a clear idea of its uses and pathology. Such a method made their own ideas clear, and it was on the true lines of science. Their friends on this side of the Border would be glad to hear that Dr. Robertson had been appointed the Scotch research pathologist in this work. (Hear, hear.)

The CHAIRMAN again thanked Dr. Robertson, and congratulated him on his appointment. (Hear, hear.)

Dr. ROBERTSON thanked the members for the very kind reception which they had given his paper. Such a reception alone, he assured them, was ample reward for all the labour the research had involved. (Hear, hear.)

Electric Lighting in Asylums, with some General Suggestions, including Details of the Installation at the London County Council's Asylum, Claybury. By ROBERT JONES, M.D., B.S.Lond., F.R.C.S.Eng., Medical Superintendent.

Early this year I contemplated publishing a short account of the electric lighting of Claybury Asylum, the first large County Asylum to be so lighted throughout; but at the request of one of the editors of the *Journal* I consented to enlarge the scope of my paper so far as to include a review of the progress of electric lighting in asylums generally.

Delay in getting information and the pressure of other work have prevented these details from appearing earlier, but the following account may be considered to bring the result of my enquiries as a summary of the subject up to April of this year.

My paper is divided into:—(1) Enquiries as to electric lighting and replies; (2) Tabulated view of replies from:—(a) English County Asylums; (b) English Borough and City Asylums; (c) Scottish Asylums, Royal, County and District; (d) Private Houses, England and Scotland; (3) A full account of that at Claybury with a few suggestions based upon the above tabulated replies and experience of the working of our own plant.

One hundred and ninety reply post-cards were sent out with two questions—(a) Do you use the electric light? (b) If not, do you contemplate its future use?—to all the homes, institutions, houses, &c., the names of which appear in the Blue Book Report of the Commissioners in Lunacy for 1896, viz.:—I., 54 County Asylums; II., 15 Borough and City Asylums; III., 14 Hospitals; IV., 5 Idiot Establishments; V., 2 Military and Naval Hospitals; VI., 1 Criminal; VII., 24 Metropolitan Licensed Houses; VIII., 48 Provincial Licensed Houses; IX., to every public—Royal, County or District—Asylum in Scotland—27 in number, the names of which appear in the *Medical Directory* for 1896.

Replies were received from all the English and Scottish County (or Royal) Asylums; all the Borough, City, or District (English and Scottish) Asylums; all the Hospitals (except Warneford Asylum); all the Idiot Establishments, the two Military and Naval Hospitals, the Criminal Asylum; all the Metropolitan Licensed Houses (except one—New-

lands House, Hayes Park), and all the Provincial Licensed Houses (except nine—Court Hall, Exeter; Witham (Dr. Payne's), Harpenden Hall; Brislington and Bailbrook Houses; Sutherland House, Surbiton; Craven Street Retreat, Hull; Gretna Bank, Kirkby Lonsdale; and Miss Page's (Idiot Home at Bath). These houses, I have reason to believe, are not lighted by electricity. The summary of the replies is as follows:—

A ENGLAND.—I. County Asylums (54):—(i.) Only three, Claybury, West Sussex, and (new) Dorset, use electric light entirely. (ii.) Seven do so partly, viz.:—Chester, Upton (where the installation was expected to be complete in April), Devon, Gloucester, Lancaster (Dr. Cassidy), Whittingham (where they had a few arc lamps, and it was being put into the new Acute Hospital), Norfolk (used for the new laundry, and is contemplated for future extensions), West Riding, Menston (used for the dining hall, but contemplated for the extensions). (iii.) The Middlesex County Asylum has the plant for electric lighting being put in (March), and the Wilts Asylum, Devizes “is to have an installation this summer.” (iv.) Among the Asylums contemplating the use of electric light are stated to be the following:—West Riding (Wakefield); Notts (new asylum); Berks Reading and Newbury; Cumberland and Westmoreland; Durham; North Wales; Northumberland; and Monmouth (Abergavenny).

II. Borough and City Asylums:—(i.) Three use it entirely—Exeter (Digbys), Norwich (Hillesdon), and Sunderland. (ii.) Six have contemplated—Bristol, Derby, Leicester, City of London (at present use incandescent gas burners), Newcastle-on-Tyne (Gosport), and Plymouth.

III. Hospitals:—(i.) Three use it entirely—St. Andrew's Hospital, Northampton, Holloway Sanatorium, and Bethel Hospital, Norwich. (ii.) One uses it partly—The Retreat, York (in one villa built in 1890, and it is proposed for any extensions). (iii.) It is contemplated in the following five hospitals:—St. Luke's, London (who say they may use it), and it is or has been considered at Bethlem, Barnwood House, The Lawn (Lincoln), and Cheadle.

IV. Of the Idiot Establishments, the Royal Albert at Lancaster state that they may use it in the future; and Mrs. Langdon Down contemplates its use at Normansfield.

V. Of the Naval and Military Hospitals plans have been approved for the latter.

VI. Its use is not contemplated at Broadmoor.

VII. Metropolitan Licensed Houses (using the Commissioners' classification):—(i.) Receiving both private and pauper cases (5 houses); (a) It is used partly at one—Hoxton House; (b) Contemplated at three, viz.:—Bethnal House, Camberwell House (if the parish or the County of London supply the streets), and Peckham House (if a public company supply it). (ii.) Receiving private patients only; (a) For both sexes (6 houses). Used only at one—Chiswick House (Dr. Tuke), but contemplated at Roehampton (“as an installation is being put up at Putney, we may use it”); (b) For males only (3 houses), not used or contemplated at any. (c) For females only (9 houses), not used at any, but four contemplated, viz.:—Featherstone Hall Southall (Miss Dixon), Hendon Grove (Dr. Hicks—if in the neighbourhood), The Huguenots, East Hill, Wandsworth (Mrs. Leach—if less expensive), and The Grange, East Finchley (Dr. Macartney—if a supply becomes available).

Incandescent gas was used with satisfaction at Northumberland House, and by Mrs. Oliver, Vine Cottage, Norwood Green, Southall. This light is stated by experts to be four times as bright with one-half the quantity of gas—*e.g.*, 15 c.p. is obtained with about 7 feet of gas, whereas with a Welsbach, 60 candle-powers burn only $3\frac{1}{2}$ feet.

VIII. Provincial Licensed Houses (48 in number):—(a) Only one uses it entirely, viz., The Grove, Catton, Norwich (licensed to Mrs. Rackham and Mr. Osbourne for one male and 20 females); (b) It was in part used at Dr. Atkins', Chalk Pit House, a private house for three ladies; (c) It was, or had been contemplated, in 15 houses, viz.:—Fisherton House, Salisbury (for 672); Haydock Lodge (for 150); Heigham Hall (for 95); Dunston Lodge, Gateshead, Durham (for 65), (Mr. Garbutt “possibly in new building”); Tue Brook, Liverpool (for 52); Glendossill and Hurt House, Henley-in-Arden (for 48); Springfield House (Dr. Bower, for 48); Wye House, Buxton (for 44, Dr. Dickson, if convenient); Kingsdown House (for 43, Dr. MacBryan); Stretton House, Church Stretton (for 40, “has been considered”); West Malling Place, Maidstone (for 39, Dr. Adam, “if favourable”); Ashwood House, Kingswinford, Dudley, Staffs. (for 31, Dr. Peacock, “possibly”); Feddington House, Devizes (for 30, “probably”); Redlands, Hadlow, Tunbridge (for 25, Mrs. Harmer, “under favourable circumstances.”)

Incandescent gas was satisfactorily used at Westbrook House, Alton, Hants (for 30, Dr. Briscoe).

B. SCOTLAND.—Including the Baldovan Asylum, Dundee, for the treatment of 70 imbeciles and idiots, there are 27 Royal, County, and District Asylums in Scotland. Enquiries were sent to all, and replies obtained—(i.) Nine used the electric light, viz.:—Royal Asylum, Aberdeen (Dr. Reid, for 750—no details received); Crichton, Royal, Dumfries (Dr. Rutherford, for 870); Royal Edinburgh Asylum, Morningside (Dr. Clouston, for 870); Dundee Royal Asylum, having it put in (February) (Dr. Rorie, for 417); Montrose Royal Asylum (for 600, the late Dr. Howden, who first wrote on this subject in the *Journal of Mental Science*); Glasgow Royal Asylum, the first Asylum in Scotland to adopt the electric light in 1889 (for 500, Dr. Yellowlees); Glasgow District Asylum and Insane Hospital (for 530, Dr. Oswald); Lanark County Asylum (for 550, Dr. A. C. Clark); Perth District Asylum (for 315, Dr. G. M. Robertson). (ii.) Eight contemplated:—James Murray's Royal Asylum, Perth (for 315, Dr. Urquhart); Argyle and Bute (for 450, Dr. J. Jameson); Banff (for 148, Dr. D. Fowler, "when occasion arrives for alteration or enlargement"); Midlothian (for 240, Dr. B. B. Mitchell); Baldovan, Dundee (for 70, Dr. Greig, "have already got plans of it"); Haddington District Asylum (for 145, Dr. Ronaldson); Stirling District Asylum, Larbert (for 500, Dr. W. H. Mackenzie, "our Board have a proposal to instal the electric light in the asylum under consideration"); District Asylum, Inverness (for 520, Dr. John Keay). (iii.) Ten neither use it, nor do they contemplate its use. (iv.) But the Parochial Asylum, Merryflats, Govan (for 236, Dr. Richards), stated that gas was very cheap—2s. 2d. per 1,000 c.f.; and Dr. Blair, Woodilee Lenzie, Glasgow (for 850), that the patent oil gas was used with satisfaction.

Electric lighting is thus used entirely in England in three County Asylums (out of 54), three Borough or City Asylums (out of 15), three Hospitals (out of 14), two Licensed Houses—one metropolitan (out of 24) and one provincial (out of 48). It is used partly in seven County Asylums, one Private Hospital, and one Metropolitan Licensed House (total, 20 out of 163). It is used entirely in nine asylums out of 27 in Scotland.

The next step was forwarding a schedule of questions as to generation of light, installation, cost, etc., to all asylums using the light. These questions were drawn up for me by

Mr. Gunyon, the London County Council's Electrical Engineer, and I gratefully acknowledge his technical help, and that of Mr. Clifford Smith, the Asylums Engineer of the London County Council, without which I could not have approached the subject. I am also indebted to our own foreman engineer, Mr. Moon. The result of these enquiries I now place in a tabular form, which makes the second part of my paper, and I take this opportunity of thanking the Medical Superintendents and others who have filled up the answers to the forms sent out, by which means I have been enabled to collect my information. It will be seen that I have also collected information from six large private houses, as suggestions for the lighting of private asylums and licensed houses.

The firms whose names I have mentioned as carrying out the different contracts have afforded me help, and I feel sure that if referred to they will gladly advise or amplify any details that I have left unexplained for want of space.

The third part of my paper deals with the electric lighting of Claybury, supplemented by a few hints based upon practical experience and the result of the tabulated answers.

In so large an institution containing beds for nearly 2,500 patients, and about 400 officers, attendants, and nurses, every detail is of great consequence, and the necessary provision of artificial light for the asylum naturally early engaged the attention of the responsible authorities. Ten years ago, when electric lighting for such places was in its infancy and on its trial, much uncertainty existed as to the best and most reliable illuminant. On the whole it had been decided that gas was safer and should be used, but the rapid development of electric light whilst the buildings were in actual progress determined the Asylums' Committee of the London County Council to reconsider whether this method of lighting could not be made available. Accordingly, after a preliminary report by the architect, Mr. G. T. Hine, he, in conjunction with Dr. Clay Shaw, the Medical Superintendent of Banstead Asylum, and the Council's electrical engineer, Mr. T. P. Gunyon, were directed to make enquiries into the electric lighting of other asylums, and to report generally upon the subject. The result of the enquiries made was strongly to impress upon those making them the many advantages which might be derived from the adoption of electricity for lighting purposes at Claybury, and after much consideration the scheme was adopted, the chairman

of the committee (Mr. Martineau) stating that "gas would probably cost less, but the superior advantage of brilliancy and softness of light, greater cleanliness, improvement in sanitation, saving in decorating walls and ceilings were sufficient to decide in its favour."

Steam was adopted as the motive power, being supplied by three Lancashire boilers, working at 130 lbs. pressure. Two boilers are, however, quite sufficient to do the necessary work, the third being a spare boiler.

The engine-room contains four engines and four dynamos, three engines being horizontal, and indicating about 150 horse power each, and the fourth being a vertical engine of about half that power. The engines are slow running, and the dynamos are driven by endless ropes from the engine fly-wheels. One set of these is also intended as spare.

The engines and boilers were constructed by Messrs. Davey, Paxman and Co., of Colchester. Where the installation is small, gas, oil-engines, or water-turbines may be used. They require less attention than steam, and in some of the replies it is seen that an under-gardener may be a sufficiently responsible person to be left in charge. Primary batteries, except for running a few lamps, are out of the question. Gas engines are made self-oiling, and they can run without attention or inspection for several hours. The drawback, however, is that the speed of gas-engines fluctuates slightly, so that running the lamps direct from the dynamo gives an unsteady light, which can best be got over, either by employing accumulators to supply the lamps alone, or keeping the accumulators in circuit while the lamps are being run from the dynamos, as they will then act as regulators and absorb the extra current, thus steadying the lights. If accumulators are not used, it is desirable to place a heavy fly-wheel on the dynamo pulley, and use a slack driving band, so that at each explosion the belt slips, thus slightly reducing the jump in the lights.

Another effective regulator is to pack up, or take off the governor of the engine—which ordinarily cuts off the gas supply when the engine exceeds its normal speed—so that it may run at full speed and take explosions regularly, but this can only be done if the engine is working maximum load, otherwise it is a very wasteful method.

Oil engines can be effectively used where gas or steam are not obtainable, and they form a cheap substitute. Common mineral oil costs only about fourpence a gallon, and about

one pint per h.p. per hour is the average consumption. The cost of some oil-engines is one-third less than steam. As a rule, they require manual labour to start them, unless they are large and fitted with a self-starter, the lamp being in such cases lit about twenty minutes before commencing work. Its desideratum, however, is steadiness, as the automatic regulator of speed and lubrication may not always be effective.

A correspondent reports in the schedule, that his house is very satisfactorily lighted by an oil engine.

The working of these is simple, and consists in the engine being fitted with an air and oil pump, the latter drawing a small quantity of oil from the reservoir at each stroke, which is mixed with air under pressure, the resulting vapour being drawn into a cylinder where it may be ignited by a spark from a battery.

Turbines, where water is abundant, are the cheapest medium for driving, and their great regularity and high speed may enable the dynamo to be driven direct without belt. Where, however, direct driving is not always practicable owing to the head of water being small, a horizontal shaft can be driven by bevel or other gearing from the vertical one of the turbine, and the dynamo then driven by belting or rope from the horizontal. One of the correspondents does not speak in high terms of turbines as a motive power for dynamos.

In Asylums there must be steam in use for supplying the kitchen and baths with hot water, also for working the laundry and other engines, and as boiler-power is often in excess of the actual requirements of the engines, some steam can always be spared for driving a separate engine, either for a direct low tension supply, or for charging accumulators, and the extra coal required to furnish the surplus steam for the electric-light engine will be almost inappreciable, and the annual cost of running the installation can almost be comprised in a small sum for sundries—oil, new dynamo brushes, and lamp renewals; the table I have given of the coal consumption at Dorset Asylum, being an example of this.

A few words about BOILERS and ENGINES may make the reading of the tables easier. BOILERS are roughly divided into four types:—1. The Lancashire; they have two large flues, through which the whole of the fire must pass. They are very simple; they usually work at from 30 to 120 lbs. pressure per square inch, and up to 200 h.p. It is better, however, to increase them in number than size.

They work many years without trouble. 2. Cornish differ from Lancashire in having only one flue. 3. Locomotive type give great power in a small space, and are economical producers of steam where high pressure is required. They can either be arranged in a separate building, are also easily fixed with slight foundations, or combined with the engines, as in the semi-portable class. They are made for 80 lbs. working pressure for ordinary engines, and 120-150 lbs. for compound ones. They require a sharper draught than the Lancashire, which is usually obtained by the exhaust steam, also more regular attention as regards firing and water-level, and care in keeping clean. They have a large number of tubes for the fire to pass through. A locomotive boiler requires a large water space round the fire box, and the mud holes so arranged that the fire-box can be seen and cleaned. 4. The water tube boiler, or Babcock and Wilcox type, has the heat applied to the outside of the tubes which are cased in brickwork, and are separate from the other portion of the boiler. Steam can be very rapidly raised, and they have great mechanical strength. They are just the opposite of tubular or locomotive boilers in so far as the fire and not the water is outside the tubes.

STEAM ENGINES are of four types for electric lighting, depending upon the size of the installation, the space available for the engine, boiler pressure, and other considerations. The four types are :—1. Fixed engines with separate boilers. These should have a massive base-plate, good stone or blue brick cement foundations. They should be designed with automatic oiling arrangements so as to work for long continuous runs. 2. Semi-fixed undertype engines with locomotive boiler, and they may be used where space is limited. The base-plate of the engine is formed at one end into an ashpit with damper doors, and receives the fire box end of the boiler; at the other—the cylinder end—the base-plate forms a feed-water tank into which a portion of the exhaust steam is discharged, so as to heat the feed-water almost to boiling point before it goes into the boiler, which rests at this end upon a crutch-shaped casting fixed over the cylinders. 3. High speed engines—and they may be horizontal or vertical, usually the latter. Owing to the high speed, there may be excessive wear, to lessen which they should be self-lubricating, and the different parts accurately balanced. 4. Small, combined, horizontal or vertical engines with boilers are very suitable for small installations of 25 to 50 lights. The engine and boiler are on the same base plate,

which is hollow and forms the feed-water tank. The engine should have a specially sensitive governor, expansion gear, and the boiler lagged with felt or silicate of cotton and covered with sheet iron.

A high speed engine 500 revs. per minute, bolted to the same bed-plate as the dynamo, and driving it direct (the spindle of the dynamo coming end to end with the engine-shaft, and bolted together by a coupling) is generally used where the space allotted to the electrical machinery is very limited. This form, when self-lubricated, by oil at a pressure of about 15 to 20 lbs. to the square inch, is also coming into favour for large installations. I am informed that these are in use for the General Post Offices in London, Liverpool, Edinburgh, etc. If these engines are placed near the switch board the same supervision may do for both. A type of these is the Bellis engine.

Any of these types may be ordinary "high-pressure" engines, discharging the steam after having done its work direct into the atmosphere at considerable pressure, or "compound" engines—when the steam passes from one small cylinder into an intermediate chamber and from this is expanded into a cylinder of considerably larger diameter, and exhausted at a pressure very little exceeding that of the atmosphere. The trouble of compound engines used to be back-pressure, owing to the irregular and improper distribution of steam between the two cylinders. Some are so satisfactory that they will work with as low a consumption as 2 lbs. of Welsh coal per h.p. per hour when working at their maximum.

The main points to be looked for in an electric-light engine are that (i.) it is steady running; (ii.) is well governed, the governors being very sensitive, working direct on the expansion links and not on the throttle valve; (iii.) that it should be capable of making long continuous runs; (iv.) that it should not be overburdened with superfluous gear or fancy-work; (v.) and it should have very large surfaces to all running parts.

A little explanation as to the use and meaning of terms may make this paper simpler.

Up to the present there is only one method of generating electricity for electric lighting which has proved practicable and successful, and this is by means of "dynamos" driven in the manner already described. When the armature of a dynamo is revolved, a difference of potential, or a difference of electric pressure—the electromotive force—is set up be-

tween the two terminals of the machine, the terminal with the higher pressure being the positive; and when these two terminals are joined by a conductor, the "current" passes from the positive terminal to the negative (hence it is necessary to insulate the wire to prevent the escape of electricity), the amount of the current being governed by the "resistance," or the amount of opposition that the conductor offers to the passage of the current—for every conductor offers some resistance to the flow, and in offering resistance, is heated, so that electricity is transformed into heat. The wires, lamps, etc., between the terminals of the battery or dynamo, are called the "circuit," and "continuity of the circuit" is the completeness of the path right through for the current, and when this is the case, the "circuit" is spoken of as "closed," but if severed at any point, is said to be "open" or "broken." The circuit has a certain "resistance" (measured in "ohms") according to the size of the wires, and the number, arrangement, etc., of the lamps.

Electric currents may be of two kinds, "continuous," or "alternating," according as the electricity flows always in the same direction, or first in one way and then in the other—the reversals taking place many times a second. The EMF (electromotive force) is measured in "volts," and the strength or amount of current passing, in "ampères." According as to whether the EMF is high or low, the circuit is said to be of "high" or "low" tension. The greater the distance between the generator and the lamps, the more will be the fall of pressure at the lamps, *i.e.*, the less will be the available EMF.

The electric energy in a circuit is measured in "watts," and one watt is the amount of energy necessary to force a current of one ampère flowing at a pressure of one volt through a resistance of one ohm. To calculate the electric energy in a circuit we multiply the volts by the ampères, and this gives the energy in watts. If the watts be divided by 746, we have the electrical horse power. To return to our description, from the dynamos—four in number—we pass on to the accumulators, which in Claybury are arranged in two sets of batteries, one of 66 cells, each of 92 plates, and another smaller, both used for the main building. The batteries, supplied by the Electrical Power Storage Company, enable the machinery to be stopped every night about 11 o'clock, after which time the light is entirely supplied from them. This is a

considerable source of economy in wages, as well as in saving of machinery when running with a light load, and more than compensates for the cost of the batteries themselves; and although Dr. Robertson, of Perth, considers accumulators to be *necessary evils*, probably on account of high cost, the heavy item involved in the renewal of the positive plate, and the skilled attention always necessary to keep them in good condition; the future of electric lighting for small installations is, in my opinion, dependent upon them, as a very small dynamo and engine with their aid, can supply current for a few hours to a considerable number of lamps. Also in case of breakdown to the machinery—where there is no duplicate—accumulators are absolutely necessary until repair is complete.

The main switchboard at Claybury is so arranged that any dynamo may be used to supply any circuit, or to charge either battery; also when the demand is small any machine can be used for all these purposes at once. This and the dynamos were supplied by Messrs. Clark, Muirhead & Co., by whom also the principal mains were run, the wiring and fittings in the building being supplied and fixed by Messrs. Burbey, Williamson & Joseph.

As to the best amount of light to use, the advisers to the Committee suggested that represented by a 16 c.p. lamp to every 250 sq. ft. of area of floor in the case of day-rooms, and 16 c.p. to every 400 sq. ft. of floor area in the case of dormitories. Dr. Robertson, of Perth, makes interesting comment on this subject in the table. The Committee of Claybury Asylum—this being, at the time, the first to be so lighted—was exceedingly anxious to render whatever system might be adopted as secure as it could possibly be made from the liability to unexpected failure of light. It was accordingly determined to run two separate circuits throughout all parts of the asylum occupied or used by the patients, the circuits being kept absolutely clear and distinct from each other throughout their entire course, so much so, as to render it quite practicable to remove one circuit entirely without interfering in any way with the other. The adoption of this precaution to a certain extent, increased the amount of light which it was originally intended to provide, as however small a room might be, if lights on two circuits were brought into it, this would give the minimum number of two lights in the room, even though the floor area was less than 250 sq. ft.; such cases being lavatories, and similar annexes,

boot-rooms, and ward sculleries. In these rooms, although comparatively small in area, several patients might be collected together at one time, and it was, therefore, of great consequence to provide against any unexpected failure of light, but it will be easily seen that the extra security provided by the double circuit was of far greater consequence than the slight extra expense involved.

It may be simpler to say that Claybury Asylum, for the present purposes, may be considered to consist of a number of separate blocks (which if they were in a street, would be considered separate houses), radiating from the outside of a central ring corridor. The kitchens, recreation hall, and some other administrative offices, being placed on the inside of this ring corridor, the chapel, Medical Superintendent's house, and the Assistant Medical Officer's residence being placed centrally in front and outside of the corridor. In addition to these the steward's house, a detached building, and Claybury Hall for private patients, another detached building nearly half a mile away from the main asylum, would also be outside the ring corridor.

The question of the precise system of electric lighting to be adopted, also received careful consideration. Of course, in the case of so large a building, it is quite possible there may be differences of opinion as to the best system which may be adopted, but after careful consideration by the Committee, it was decided, on the advice of the Electrical Engineer, to adopt the low tension continuous current. One reason in addition to many others which had great weight in this matter was that in an asylum it is practically impossible to provide at all times that patients who are assisting in the work of the place shall not by any possibility come in contact with any part of the circuit, and the adoption of the low tension continuous current system means that no possible injury to person can result from any such accidental contact. There is no part of the circuit from which there is any possibility of a fatal or even serious shock being received. This system can also be used for electro-motors, storage, and other purposes without a transformer. Having decided on this point, it was seen that the best possible arrangement was to utilise the basement of the ring corridor previously referred to, to carry the principal supply mains. These were run from the switchboard in the engine-room (which is situated almost in the centre of the long side of the ring corridor) into this basement corridor. Each

circuit is taken right round the ring corridor, forming a complete ring itself. The feeding mains from the switch-board are in the shape of bare copper rods (and these on reaching the corridor basement are altered into copper strip), which lead to five feeding points in the ring mains, the object being to equalise or evenly distribute the EMF. Separate feeding mains are of course used for each of the two main circuits. The maximum current hitherto observed at any time has been about 1,200 ampères, but since the opening of the asylum this has not been exceeded.

From each of the main ring circuits each block of buildings (treated as a separate house) is supplied by a "service main," which is taken through a "special main double pole switch" and fuse, and then taken into the nearest convenient lobby in the blocks, and by means of a distribution board split up into several small distinct circuits, one going to each separate room, or group of rooms, as the case may be, a separate circuit also being taken from this board to each floor above the ground floor. The light for the whole block can be controlled from this special main switch, and it is useful as in the winter mornings when nurses and attendants are careless about turning out the lights, they can be completely switched off here by the engineer's men.

The total number of lights originally provided for was 3,850, but in carrying out the work it was found possible to somewhat reduce this, and the number actually installed was about 3,750, including outside lights as well as indoor lights. All the switches are within reach of patients, about 4 ft. from the ground, and they are of the tumbler or button patterns. We never find that patients tamper with them. I think that (except in single rooms) switches should be on the handle side of the door, just inside, so as to turn the light up on opening the door in the dark.

The lights are mainly of 16 candle-power, but in the "single rooms" 8 c.p. were used, but now the half-burnt lamps from day-rooms, etc., are utilised. At the various entrances to the building lamps of 32 or 50 c.p. are used in lanterns, generally two lamps in a single lantern. There were also two arc lamps—one for lighting the stores yard and the other for lighting the front of the boiler-house (where the coal shoots are), in order that the work at either place may be carried on with facility at night, but these have now given place to incandescents of high candle power. The lamps in the wards are, as a rule, fitted as plain cord

pendants, with either enamelled iron or opal shades, but in certain window-bays of day-rooms there are pulley lights to be raised or lowered. In the "single rooms" and in confined places on the staircases bulk head fittings are used, whilst in the recreation hall, chapel, and officers' quarters fittings of more ornamental description have been placed. The recreation hall, 60 feet wide, 45 feet high, and 120 feet in length (exclusive of the stage) is lighted by eight 12-light electroliers in two rows of four each, one each side the centre of the ceiling of the hall. The stage is fitted with footlights, with three battens, and with hanging lengths for use in the wings or on the scenes, the switchboard with the necessary resistances for regulating these lights being fitted conveniently on the stage. There are over 200 lights on the stage. The lights in the hall itself are regulated from a separate switchboard at the end of the hall, and provided with a special switch changing over from one circuit to the other as may be required. This is a variation from the practice generally adopted at Claybury of having alternate lights.

Supplied by the two circuits, the chapel is lighted by 10 corona brackets, three on each side, and each of 10 lights, and one 15-light corona close to the chancel arch. There are also two 3-light standards each side of the choir stalls, and special lights for the organ.

The committee rooms are also lighted by means of electroliers and brackets. In the kitchen four iron electroliers, each with 4 lights, have been fitted, as well as an electric cooking stove, but the cooking generally is done by gas. The officers' quarters and committee rooms are lighted entirely from one circuit, called the A circuit. This is always maintained at full pressure, so as to give a normal light at all times; but the other, or B circuit, is, at a given hour at night, viz., 8.15 p.m. (by which time the patients are generally in bed), reduced in pressure so as to give a comparatively dim or night-light, which, while it is sufficient to enable the attendants to see what is going on in the dormitories, is yet not so bright as to interfere with the patients' rest. This is an additional advantage arising from the use of two separate circuits. Should the attendant in any room or dormitory, other than a side room, desire a bright light for any purpose the A circuit is available, and only requires the switches in the room to be turned on. Another advantage of a double circuit is that perchance should a light go out by the melting of a

fuse or other cause the light of the other circuit can be used to search for the fault and the defect remedied. There is thus no hunting for the defect in the dark and no panic where patients may be collected.

As to the high pressure system for the supply of private houses, &c., from a public company, "transformers" are used, the electricity being supplied at about 2,500 volts. It is by means of these that the current is reduced at the consumer's house to more convenient and safer limits (50-100 volts.), the change being from a high EMF and a small current to a large current with a low EMF. The "transformer" is a modification of the induction coil, the high voltage induces a low voltage secondary current and the reduction may be arranged both at sub-stations as well as at the consumer's house. The Board of Trade regulates that for safety, the voltage, which may be 10,000 at the central station, should not be more than 250 at consumer's house. It is an advantageous system when the generating station is a long way off or when there are long distances between consumers' houses; it is easy to work, and a simple system; but it is difficult to insulate and dangerous, as there may be a leak from the primary to the secondary coil, resulting in loss of life or property, also if the engine breaks down the supply is cut off. A separate meter is often used in houses for a day load.

The whole electric plant of Claybury, which has been executed to the specifications and under the supervision of the Council's Electrical Engineer—Mr. Gunyon, for whom Messrs. Ross Cotton and Reginald Stubbs acted as clerks of work—has been entirely satisfactory, and as an administrator I add my tribute to that of the Asylums' Committee who have expressed unqualified satisfaction with this great work.

I very much regret that I have been unable to reproduce the many sketches and illustrations which have been sent to me from different asylums or to insert any of our own, and I hope that this somewhat discursive paper may be of assistance to those who contemplate an electric installation. I have endeavoured to make it as little technical as possible. The tables giving the particulars of other installations cannot but be a useful reference, although my part of the contribution may be, I fear, disjointed, as it has been compiled during occasional hours snatched out of an unusually busy time, which must be my apology for its many imperfections.

Questions.	London County Lunatic Asylum, Claybury.—Opened, 1893. No. of Patients, 2,500.	Dorset County Asylum, Charmminster, extended. [These details were obtained with the courteous sanction of the Chairman of Committee.] Patients over 550.	West Sussex Asylum, Chichester. Opened, 1897. No. of Patients, 400. Administration for 800.	County Asylum, Whittingham. No. of Patients, over 1,870.
i. If gas is used, then cost of making per 100 cubic feet—including repairs and maintenance of gas works and mains?	i. Gas used for cooking and lighting the carriage drive to the Asylum (above half-a-mile). Cost 2s. 2d. per 1,000 c.f.	i. Gas formerly used and made on premises.	i. —	i. About $\frac{1}{2}$.
ii. If electric light, when inaugurated?	ii. When Asylum was opened in 1893. [Current consumption recorded when running direct from dynamo to line by periodic—every $\frac{1}{4}$ hour—reading of ammeter. Current supplied by battery measured by Aron-meter.]	ii. Sept. 1895.—Carried out by the Newton Electrical Works, Taunton.	ii. Electric light arranged for in building Asylum, and carried out by R. Crittal & Co, London.	ii. Only eight arc lamps for outside lighting, inaugurated June, 1893. Electric lighting arranged for new hospital, now building.
Boilers—				
i. Number?	i. Three.	i. —	i. Three.	Part use of one boiler, mainly used for other purposes.
ii. Type?	ii. Lancashire.	ii. Ashwell and Nesbit's own make.	ii. Galloway's tubular.	
iii. Working pressure?	iii. 120 lbs. to sq. in.	iii. 70 lbs. per sq. in.	iii. 125 lbs.	
iv. Is any use made of exhaust steam?	iv. To heat feed water, and of late to heat water for use in half male side.	iv. Yes, for heating purposes.	iv. No.	
Engines—				
i. Number?	i. Four.	i. Three.	i. Two sets.	[See above.]
ii. Type?	ii. Three horizontal high pressure compound, one vertical ditto.	ii. Willan's 'EE' double crank.	ii. Vertical compound.	
iii. Horse power?	iii. Three 125 i.h.p., one 80.	iii. 32–40.	iii. 67 horse power = 45 kilo-watts.	
iv. No. of revolutions per minute?	iv. Three 90 revs., one 200.	iv. 520.	iv. 460.	
v. How connected with dynamos, viz., if direct coupled, ropes, or belt?	v. Three by seven $5\frac{1}{2}$ in. endless ropes each, one by 12 in. leather link belt.	v. Direct coupled.	v. Direct coupled.	
Dynamos—				
i. Number?	i. Four.	i. Three.	i. Two.	i. One.
ii. Shunt or compound wound?	ii. Shunt wound.	ii. Shunt.	ii. Shunt.	ii. Compound.
If shunt wound?	(a) Variable resistance in shunt adjusted by attendant in charge.	(a) Rheostats in shunt worked by hand.	(a) Adjustable sliding hand resistance, & automatic expansion gear on engines.	(b) No.
(a) What means of regulating the electromotive force?	(b) Yes.	(b) No.	(b) No recorder; three voltmeters.	iii. 800.
(b) Is a recording voltmeter used?	iii. Three 450, one 600.	iii. 520.	iii. 460.	iv. 44.
iii. No. of revolutions per minute?	iv. Three 88 k.-w., one 40 k.-w.	iv. 18,400.	iv. 45 kilo-watts.	
iv. Maximum output in kilo-watts?				

NTY ASYLUMS.

County Asylum, Lancaster. No. of Beds, 2,000.	Devon County Asylum. Bull. 1845. Extensions from time to time. Patients, 1,092.	Gloucester County Asylum. Patients, 1,660.	Chester County Asylum, Upton, Chester. Patients, 650.	Remarks on Boilers, by Mr. W. C. Clifford Smith, Engineer to the London Asylums.
<p>i. Yes. From Lancaster Corporation at 2s. 6d. per 1,000.</p> <p>ii. Since 1892.</p>	<p>i. 2s. 6d. per 1,000.</p>	<p>i. Gas obtained from City of Gloucester Gas Co., at 2s. 6d. per 1,000 c.f., at first Asylum—less 10 per cent. as large consumers and 5 per cent. for cash in a month. 2s. 9d. per 1,000 c.f. at second Asylum less 5 per cent. in a month.</p> <p>ii. Electric light only employed at second Asylum for lighting the dining hall.</p>	<p>i. Supplied by Chester Gas Co., at 3s. 5d. per 1,000.</p> <p>ii. Contractors now (March) putting in engines & dynamos.</p>	<p><i>Boilers for the purpose under consideration may be divided into four types—</i></p> <p>i. Lancashire.</p> <p>ii. Cornish.</p> <p>iii. Locomotive (semi-portable or fixed); and</p> <p>iv. Water Tube.</p>
<p>i. Six.</p> <p>ii. Lancashire.</p> <p>iii. 60 lbs.</p> <p>iv. Drying in laundry.</p> <p>i. —</p> <p>ii. —</p> <p>iii. —</p> <p>iv. 425.</p> <p>v. Three existing belts driven, new one to be direct driven.</p>	<p>i. Two—one working, other at rest.</p> <p>ii. Lancashire, 30 by 8 feet.</p> <p>iii. 110 lbs.</p> <p>iv. Yes, cooking, heating wards, and hot water supply.</p> <p>i. Two.</p> <p>ii. Turbines (two).</p> <p>iii. 50 horse power each</p> <p>iv. 16,000.</p> <p>v. Direct.</p>	<p>—</p> <p>i. Two. The generating of this light is, however, only a very small item amongst the various duties of the engines</p> <p>ii. Gas (Crossley's).</p> <p>iii. 12 horse power.</p> <p>iv. —</p> <p>v. By belt.</p>	<p>i. Three.</p> <p>ii. Lancashire.</p> <p>iii. 120 lbs.</p> <p>iv. Used to heat wards.</p> <p>i. Three.</p> <p>ii. Double-acting compound enclosed.</p> <p>iii. 50 each.</p> <p>iv. 450.</p> <p>v. Direct.</p>	<p>i. The Lancashire boiler is circular with a length of from three to four times its diameter. It is constructed of steel plates of a thickness to stand the pressure to be carried, and is set in brickwork upon iron or fireclay bearers. It has two furnaces, and the flues from these are carried singly or in combination throughout the length of the boiler, and the whole of the products of combustion pass through these along the sides of the boiler to the front and then beneath the bottom to the back, thence again to the chimney. From this it will be seen that a part of the external surface of the boiler as well as the interior of the flues is useful heating surface.</p>
<p>i. Three. [One 200—16 c.p., one 70—16 c.p., one 500—16 c.p.]</p> <p>ii. Compound.</p> <p>(b) No.</p> <p>iii. 425.</p> <p>iv. —</p>	<p>i. Four.</p> <p>ii. Shunt.</p> <p>(a) By resistance.</p> <p>(b) Yes.</p> <p>iii. 1,500.</p> <p>iv. 32,500 watts.</p>	<p>i. One.</p> <p>ii. Compound wound.</p> <p>iii. 1,000.</p> <p>iv. 125 volts and 50 amperes.</p>	<p>i. Three.</p> <p>ii. Shunt wound.</p> <p>(a) Shunt regulator</p> <p>iii. 450.</p> <p>iv. 35.</p>	

Questions.	London County Lunatic Asylum, Claybury.—Opened, 1883. No. of Patients, 2,500.	Dorset County Asylum, Charminster, extended. Patients over 550.	West Sussex Asylum, Chichester. Opened, 1897. No. of Patients, 400. Administration for 800.	County Asylum, Whittingham. No. of Patients, over 1,870.
Are there accumulators? What capacity? When charged? When supplying the light? Do they work any motors?	Yes. Central station K type. Two batteries. No. 1 Battery has 61 (and 5 spare cells), each containing 4 sets of 23 plates each. No. 2, 57 (and no spare cells), each containing 2 sets of 23 plates. Aron-meter used. i. One of 1,500 ampère hours, one 700 (maximum normal discharge). ii. In afternoon. iii. At night. iv. Laundry machinery, fans, tools in engineer's shop.	Yes. i. 60 ampères 110 volts discharge for nine hours. ii. 70 ampères 135 volts charge. iv. Two ventilating fans.	Yes. i. 135 ampères for 3½ hours. ii. At maximum rate of discharge 700, 40 watt lamps for 3½ hours. iv. Four.	No.
How long is the generating plant run? and when? What number of men employed, and what are their special duties? Hours of work per day or week? What other duties do they perform if not fully occupied on the electric plant?	i. Summer, dusk till 11.30 p.m. Winter, 5.30—8.30 a.m. 4.0—11.30 p.m. ii. Three, engine driver, stoker, and dynamo attendant, with relief set of men variously employed. iii. Nine hours a day for six days per week. iv. The relief set as follows: 1 engine driver works the freezing machine, the stoker does boiler cleaning and the dynamo attendant does electric lighting repairs.	i. Six. ii. One man—the general engineer of the Asylum—and the Stoker.	[Not yet working].	i. Sunset to 10 p.m. ii. One electrician. iii. Attendants' hours.
Is there more than one circuit? Direct or alternating? Current used? What voltage?	Two. One (A) supplies all officers' quarters, alternate lights in day rooms, corridors, & dormitories, the other (B) supplies single rooms, and the alternate ones in day rooms, dormitories, & corridors, which can be lowered in illumination at 8 p.m. by resistance. i. Direct. iii. 110.	Two sets of feeders to each Asylum—the old and new. The trunk main in each Asylum is fed by two independent feeders but in parallel. i. Direct. ii. Varying. iii. 100 volts.	Ten circuits. i. Direct. ii. 45 kilo-watts. iii. 200 volts.	One. i. Direct. ii. 10 ampères. iii. 360.
i. How are lights managed in rooms? ii. Can the illuminating power be decreased? If so, where, and by what means?	i. Single rooms have switch to each, in other places switch for one to five lights. ii. The EMF of B (above) supplying side rooms and alternate lights in other places reduced to 92 volts (about half candle power), at 8.15 p.m. each evening.	i. Mostly pendant lights controlled by plain switches, and a few key switches, brackets, ceiling and bulkhead lights. ii. No, except by turning out some of the lights.	i. Pendants. ii. Yes, in two dormitories by placing lamps in series.	Nil.

ASYLUMS.—CONTINUED.

County Asylum, Lancaster. No. of Beds, 2,000.	Devon County Asylum, Built 1845. Extensions from time to time. Patients, 1,082.	Gloucester County Asylum. Patients, 1,660.	Chester County Asylum, Upton, Chester. Patients, 650.	Remarks on Boilers, by Mr. W. C. Clifford Smith, Engineer to the London Asylums.
<p>No.</p> <p>i. — ii. Two boiler men and assistants to fire boilers. iii. Twelve hours a day.</p>	<p>Yes. 120. i. L type 60 ampères, K type 120 ampères. iv. No.</p> <p>i. Sundown to sunrise. ii. One engineer, one fitter, and one stoker.</p>	<p>No.</p> <p>i. Half an hour a day. ii. One—the engineer.</p>	<p>No. iv. We shall have six motors when com- plete.</p> <p>[Not yet working.]</p>	<p>These boilers are very simple in con- struction and per- mit of easy access, which is to be con- sidered when the periodical cleaning takes place. They cost but little for repairs, and are probably the most lasting of all the above types. In ar- ranging a plant for this type of boiler— or indeed with any— it is better to have two medium-sized than one large size. These boilers are constructed to carry pressure from 15 lbs. to 130 lbs. per sq. in. iii. The Locomotive types are used where rapid steam power and high pressure are required. The heat- ing surfaces in these boilers are all inter- nal, and are in the fire-box and the tubes which run from the fire-box to the up- take and chimney. Narrow water spaces surround the fire-box on three sides, as also the tubes (which are of small diameter and run through the barrel). No setting is thus required as in the case of (i.) the</p>
<p>Three. i. Direct. ii. — iii. 120.</p>	<p>Three. i. Direct. ii. 125 ampères. iii. 110.</p>	<p>No. i. Direct. ii. Cable wire. iii. 16.</p>	<p>12 circuits i. Direct. ii. 1,000 ampères about. iii. 110 volts</p>	
<p>i. Switched on and off. ii. No.</p>	<p>i. By switches in the rooms. ii. No means.</p>	<p>Nil.</p>	<p>i. Keyless switches outside of small rooms. ii. No.</p>	

Questions.	London County Lunatic Asylum, Claybury.—Opened, 1893. No. of Patients, 3,500.	Dorset County Asylum, Charmminster, extended. Patients over 550.	West Sussex Asylum, Chichester. Opened, 1897. No. of Patients, 400. Administration for 800.	County Asylum, Whittingham. No. of Patients, over 1,870.
9. Arrangements for recreation hall, chapel, dining halls, & single rooms — whether electrolliers, pendants, or brackets. [A rough sketch of some typical rooms, showing where lights are placed, would be useful.]	<i>Recreation hall</i> , 120ft. by 80ft. by 45ft. Eight electrolliers of 12 lights each; these can be lowered to about $\frac{1}{2}$ c.p. by means of a variable resistance in circuit with them. <i>Chapel</i> .—Electrolliers arranged with lamps alternately on (A) and (B) circuit. <i>Single rooms</i> .—Light in ceiling, protected by bulkhead glass. <i>Day rooms, dining rooms, & dormitories</i> .—Ordinary pendants with opal shades; some pulley lights in day rooms. <i>Stage footlights</i> .—Slide lights, batten lights	<i>Recreation hall</i> .—Three large electrolliers of ten lights each, 14 brackets of three lights each. Red and white light alternately on different circuits for footlights, batten lights all white, side lights all controlled by suitable main switches. A platinumoid resistance regulates the EMF of stage and hall. <i>Chapel</i> .—Wrought iron electrolliers of four lights each. There are about four circuits, each having DP switch and fuse at base.	<i>Recreation hall</i> .—Electrolliers and switches on stage, single light in roof with switch in hall. <i>Chapel</i> .—5-light pendants, switch near organ. Separate switch for one light in alternate pendants.	Gas.
10. i. How are the lights controlled? ii. Is there a switch or tap to each?	i. Ordinary switches, about 5ft. from floor. ii. No key switches; tumbler in officers' rooms.	i. Few key sockets, taken generally. ii. There is a switch to every three lights.	i. Separate switch to each light usually.	Nil.
11. Height of lamps from floor in feet. i. Day rooms. ii. Dormitories. iii. Other places.	i. 7ft. 6in., one 16 c.p. to about 70–100 sq. feet. ii. 10ft. iii. Corridors, passages, etc. 9ft., about 250 sq. feet per 16 c.p.	i. 8ft. 4in. ii. Nearly 9ft. iii. Between 8 and 9 ft. in corridors, etc.,—to suit circumstances.	i. 8ft. ii. 8ft. 6in. iii. 7ft. 6in. to 9ft. 6in.	—
12. i. Size of lamps (c.p. marked on lamp). ii. What distance apart—in feet. (a) Day rooms. (b) Dormitories. (c) Other places, corridors, &c. iii. If arc lamps, where, what kind, and power? iv. How many hours per an. are lights burning?	i. 16 c.p. clear in day rooms, obscured in corridors, single rooms, and dormitories, several 3½ and 50 c.p. (a) 10ft. (b) 18ft. (c) 40ft. iii. Two, 1,000 c.p. each, parallel system used for illuminating open yards of administrative department, which have lately been altered to incandescent lamps of 500 c.p. each. iv. Average four hours a day throughout the year=1,400 hrs.	i. 8-16, and a few larger c.p. ii. (a) & (b). No definite arrangement. (c) Corridors are on two-way switches, lighting or extinguishing at either end. Lights 50ft. apart is found to be more than enough. iii. None. iv. Engines stop at 8 p.m., when patients retire, then burn off accumulator. Engines run again for morning lighting.	i. 8 and 16 c.p. ii. (a) — (b) — (c) — iii. None.	i. — ii. — iii. Outside, Blakey Emott in series, 2,000 c.p. each.

ASYLUMS.—CONTINUED.

County Asylum, Lancaster. No. of Beds, 2,000.	Devon County Asylum, Built 1845. Extensions from time to time. Patients, 1,092.	Gloucester County Asylum. Patients, 1,060.	Chester County Asylum, Upton, Chester. Patients, 650.	Remarks on Boilers, by Mr. W. C. Clifford Smith, Engineer to the London Asylums.
Gas only—not any elec- tric light.	<i>Recreation hall.</i> —Brack- ets. <i>Stage.</i> —39 8 c.p. lamps in battens, 13 foot- lights, two side- lights.	<i>Dining hall.</i> —60 16 c.p. arc lamps.	Electroliers, pendants, and brackets.	
— —	i. By switches. ii. No.	Switch to each.	i. In dormitories all lights run on one switch except one 8 c.p. light which has a switch to itself for night attendant.	Lancashire, and (ii.) the Cornish boilers. They are not so ac- cessible for cleaning as the previous types owing to the narrow water spaces and close staying, and they require more frequent cleaning. Locomotive boilers are built to carry working pressures of from 80 lbs. to 180 lbs. per sq. in. They produce steam very quickly, and are ex- cellent boilers to res- pond to quick firing and forced draught, but they cannot be described as econ- omical.
—	i., ii., and iii. Average 10 ft.	i. — ii. — iii, 10 ft.	i. 6 to 8 ft. ii. About 8 ft. 6 in.	iv. The Water Tube boiler, and there are many types of this class—only however intended for high pressure—is built up of a number of small tubes with a drum in connection to act as steam receiver. As the major part of the tubes is exposed to the products of com- bustion from the fur- nace, these boilers are very rapid steam raisers. They are set in brickwork or iron casings, and usually the setting is very simple. The ques-
i. 8, 16, 25, and 32 c.p. ii. (a) — (b) — (c) — iii. Not any. iv. 4,327.	i. 5, 8, and 16 c.p. ii. (a) 12 ft. (b) 30 ft. (c) 15 ft. iii. None. iv. 4,374.	i. 16 c.p. ii. (a) 10 ft. (b) 10 ft. (c) 10 ft. iii. — iv. Half-hour during tea only—during the winter months.	i. 8, 16, 25, and 32 c.p. ii. (a) 18 to 25 ft. (b) 30 ft. (c) 20 to 30 ft. iii. None.	

Questions.	London County Lunatic Asylum, Claybury.—Opened, 1893. No. of Patients, 2,500.	Dorset County Asylum, Charminster, extended. Patients over 550.	West Sussex Asylum, Chichester. Opened, 1897. No. of Patients, 400. Administration for 800.	County Asylum, Whittingham. No. of Patients, over 1,570
13. First cost of— i. Machinery & plant. ii. Wiring & fittings. iii. Buildings (engine house, etc.)	Estimate, £17,500. Real cost, £23,000.	i. About £2,000 (no boilers included). ii. About £2,000.	Contract for wiring, fitting, and machinery with electric light installation was placed with E. Critical & Co., London, for £5,228 7s. 0d.	i. & ii. £450. iii. Old building.
14. Annual cost of working. i. Wages. ii. Rate of pay. iii. Coals—quantity & quality. iv. Sundries. v. Cost per English Board of Trade unit (1000 watt hours) per an.	For 1896—1897 (April to April):— i. £234 7s. 5d. ii. Dynamo attendant 9d. per hr. Engine driver 7½d. Stoker 6½d. per hr. iii. 870 tons Nixon's Navigation, £717 18s. 9d. iv. Repairs £121 1s. 8d., Sundries—oil, waste and water—£18 15s. 7d. v. 1·89 pence. Total units supplied for year 179,565.	i. £29 14s. 9d.; ii. —; iii. £76 7s. 6d.; iv. £26 12s. 6d.—Total for one year £132 14s. 6d. v. Under 2½d. per unit.	[No experience yet of its working.]	i., ii., iii., iv., and v. Mixed up with other work and therefore could not say.
15. i. Are any special means used to ensure economy? ii. What alterations (if any) would be beneficial?	i. Rules for attendants and nurses. ii. Very satisfactory.	i. Nurses and attendants answerable for lights in use. ii. Larger storage battery to enable one dynamo to be worked to its full capacity for charging. The following results as to coal consumption are interesting:—Daily coal consumption with no engine running, 43 cwt.; consumption with one engine and exhaust steam used for laundry coil and hot water heater 43 cwt.; the same consumption, but exhaust steam blown off, 45 cwt.	[See above.]	i. No. ii. Better lamps, with automatic cut out desirable. New hospital is to be lighted with electricity, but particulars not yet (March) out.

ASYLUMS.—CONTINUED.

County Asylum, Lancaster. No. of Beds, 2,000.	Devon County Asylum, Built, 1845. Extensions from time to time. Patients, 1,092.	Gloucester County Asylum. Patients, 1,060.	Chester County Asylum, Upton, Chester. Patients, 650.	Remarks on Boilers by Mr. W. C. Clifford Smith, Engineer to the London Asylums.
i. £1,913.	i. and ii. £4,854. iii. £800.	i. and ii. £535.	—	
i., ii., iii., iv., and v. Not known.	i. £150. ii. — iii. Unknown at present iv. — v. Unknown	The use of the light is on so very small a scale that the engineer switches it on for half-an-hour in the evening as part of his ordinary work cost being almost nil. v. Cannot say.	—	tion of the water used in the boiler becomes <i>most</i> impor- tant with this type— with all boilers it is important — and should be considered at the time the type of boiler is decided upon, as in the water- tube boiler, where the tubes are small and the temperature usually very high, hard water would in a short time serious- ly diminish the value of the heating surface, and it is only too probable that such water would have to be treated before it could be economic- ally used in these boilers.
i. No. ii. Lighting satisfac- tory.	i. General direction. ii. Lighting incom- plete—not yet satisfac- tory. Of opinion that turbines should be avoided.	i. No. ii. Our lighting is fairly good, but I dislike the system—instal- lation is enormously expensive. Ought in an Asylum to be supplemented by gas in the not im- probable event of the E.L. coming to grief.	i. — ii. Installation not yet (March) in working order, cannot there- fore say if altera- tions may be ne- cessary or not.	

ENGLISH CITY AND BOROUGH ASYLUMS, LUNATIC

Questions.	Exeter City and Borough Asylum. Built 1886. No. of Patients, about 400.	Sunderland Borough Asylum. Built 1893 and 1894. Opened 1895 for about 450 Patients.	Norwich City Asylum, Hillesdon. Opened 1880 for about 300 Patients.	Portsmouth Borough Asylum. Built 1879 for about 560 Patients.
i. If gas is used, then cost of making per 1,000 cubic feet—including repair and maintenance of gas works and mains?	i. No gas (refers to lighting only). ii. 1886.	i. Gas is not used. ii. May, 1895.	i. 3s. 9d. from Norwich Gas Company. ii. 1887.	We do not make our gas, neither do we generate the current for electric lighting, being supplied from the Portsmouth Corporation (see below)
ii. If electric light, when inaugurated?				
g. Boilers—				
i. Number?	i. One in use, one out of use.	i. Three—one of which is fitted with mel-drum furnace, which has not been found of much advantage as Duff coal is used for all the boilers.	i. Two. ii. Cornish.	—
ii. Type?	ii. Lancashire, with Galloway tubes.	ii. Galloway.	iii. 60lbs. each.	
iii. Working pressure?	iii. 75lbs.	iii. 75lbs.	iv. —	
iv. Is any use made of exhaust steam?	iv. Heats feed water. [Boiler supplies steam for lighting engine, pumping engines, laundry, kitchen, etc.]	iv. Heating the building (Plenum system).		
h. Engines—				
i. Number?	i. One.	i. Two.	i. Two for pumping, laundry, and light.	—
ii. Type?	ii. Marshall and Sons, horizontal, non-condensing, automatic cut-off.	ii. G. E. Belliss & Co.—closed type.	ii. Horizontal.	
iii. Horse power?	iii. 16 nom.	iii. 4½ brake.	iii. One 10, one 15.	
iv. No. of revolutions per minute?	iv. 70.	iv. 500.	iv. One 90, one 120.	
v. How connected with dynamos, viz., if direct coupled, ropes, or belt?	v. Rope driver.	v. Direct coupled.	v. Belt.	
i. Dynamos—				
i. Number?	i. One.	i. Two.	i. Two.	
ii. Shunt or compound wound?	ii. Shunt.	ii. Shunt.	ii. Shunt.	
iii. If shunt wound?	(a) Variable resistance in series with shunt field—controlled by hand.	(a) Regulated by shunt resistance.	(a) Switching on or off to machine as required.	—
(a) What means of regulating the electro-motive force?	(b) No.	(b) No.	(b) Yes.	
(b) Is a recording voltmeter used?	iii. 650. iv. Said to be 30.	iii. When charging accumulators 500 (135 volts), when running direct—speed unknown. iv. 21.	iii. One 700, one 1,000. iv. —	
ii. No. of revolutions per minute?				
iv. Maximum output in kilo-watts?				

HOSPITALS, AND LICENSED HOUSES.

St. Andrew's Hospital, Northampton, for about 350 Patients. Built 60 years ago, much altered and improved.	Holloway Sanatorium for 350 Patients.	Hoxton House, London. No. of Patients 276.	Other Hospitals and Licensed Houses. London and Provincial.
<p>i. Gas supplied by the Town Council, and is laid on to all parts of the hospital, but is now only used in case of emergency—except for cooking.</p> <p>ii. 1886.</p>	<p>i. About 3s. 9d. per 1,000 c.f. Gas is used only for cooking, and a few underground lights.</p> <p>ii. 1885—re-wired and extended in 1892.</p>	<p>i. Gas from Gas Light and Coke Company.</p> <p>ii. Only 40 lamps can be used at present.</p>	
<p>i. Two.</p> <p>ii. Lancashire.</p> <p>iii. 70lbs. per sq. in. (blows off).</p> <p>iv. Used for heating water for general supply — passed through Berryman heater.</p>	<p>i. Three.</p> <p>ii. and iii. One Davey Paxman, economic, 7ft. 6in. by 1ft.; one Lancashire, 8ft. by 28ft.; each 120lbs.; one Gallo-way, 7ft. 6in. by 28ft., at 70lbs.</p> <p>iv. Exhaust steam for hot water supply throughout asylum.</p>	<p>i. One.</p> <p>ii. Cornish.</p> <p>iii. 40lbs.</p> <p>iv. Yes, for heating drying closets.</p>	<p>Dr. Fielding, of the Bethel Hospital, Norwich, states that he has about 100 lights supplied by the Norwich Electricity Company. It has been in use about one year, and Dr. Fielding is very pleased with the change from gas to electric light. [No. of patients, 78.]</p>
<p>i. One.</p> <p>ii. Compound, horizontal.</p> <p>iii. —</p> <p>iv. 160.</p> <p>v. Belt.</p>	<p>i. Two.</p> <p>ii. Compound — Colchester type.</p> <p>iii. 65 indicated.</p> <p>iv. 120.</p> <p>v. Belt driver.</p>	<p>i. One.</p> <p>ii. Horizontal.</p> <p>iii. 3½ h.p.</p> <p>iv. 120.</p> <p>v. Countershaft and belt.</p>	
<p>i. One.</p> <p>ii. Compound.</p> <p>(a) —</p> <p>(b) No.</p> <p>iii. 425.</p> <p>iv. 250 ampères.</p>	<p>i. Two.</p> <p>ii. Compound wound.</p> <p>(a) —</p> <p>(b) Crompton and Goulding's voltmeter used.</p> <p>iii. 510.</p> <p>iv. 250 ampères each.</p>	<p>i. One.</p> <p>ii. Shunt wound.</p> <p>(a) Automatic cut out.</p> <p>(b) No.</p> <p>iii. 1,800.</p> <p>iv. 33.</p>	

ENGLISH CITY AND BOROUGH ASYLUMS, LUNATIC

Questions.	Exeter City and Borough Asylum. Built 1886. No. of Patients, about 400.	Sunderland Borough Asylum. Built 1893 and 1894. Opened 1895 for about 450 Patients.	Norwich City Asylum. Hillesdon. Opened 1885 for about 300 Patients.	Portsmouth Borough Asylum. Built 1879 for about 560 Patients.
5. Are there accumulators? i. What capacity? ii. When charged? iii. When supplying the light? iv. Do they work any motors?	Yes. E.P.S. K type. 29 plates. ii. 490 ampere hours. iii. 390 ampere hours. iv. No.	Yes. i. 450 ampere hours. ii. and iii. Cannot be exactly stated. iv. Yes, sometimes; there are 5 in all. 3 for ventilating, 1 for laundry, 1 small one as exhaust fan in kitchen.	No.	—
6. i. How long is the generating plant run? and when? ii. What number of men employed, and what are their special duties? iii. Hours of work per day or week? iv. What other duties do they perform if not fully occupied on the electric plant?	i. 6 a.m. to daylight for direct lighting; 9 a.m. to 5 p.m. for charging accumulators and driving laundry (laundry is driven by the same engine), and from dusk to 8 p.m. If, however, dusk occurs before 5 p.m. the engine runs the lighting and laundry together. ii. The work of lighting is joined to the other engineering work, which is carried out by one resident electrical engineer, three stokers (who can run the engine and dynamo), and a youth. A night watchman attends to the fires during the night. iii. Stokers' hours about 54 per week.	i. 24 hours in winter, in summer only to charge accumulators and run the laundry machinery. ii. Engineer for general superintendence, an engine man & fitter one for night and one for day, the latter engaged for the winter only. 2 stokers — one for night and one for day, one stoker only in the summer, who relieves on alternate Sundays at the boiler. iii. 60 hours per week. iv. Seeing to kitchen and laundry apparatus, hot and cold water systems, electric bells, telephones, and all fire appliances with brigade.	i. When it is dark. ii. Men change over — no special men in charge. iii. — iv. Engine department.	—
7. Is there more than one circuit? i. Direct or alternating? ii. Current used? iii. What voltage?	There are seven branch circuits, but any individual ward is only supplied by one branch. i. Direct. ii. 170 ampères—maximum. iii. 97 volts.	i. Direct. ii. 200 ampères. iii. 105 volts.	No. i. Direct. ii. — iii. 110 volts.	—
8. i. How are lights managed in rooms? ii. Can the illuminating power be decreased? If so, when, and by what means?	i. By thumb switches. ii. Generally, each day room and dormitory has two switches—one switch controls one lamp, the other the rest of the lamps in the room.	i. Switches. ii. Resistance on stage and in recreation hall.	i. & ii. Switches where necessary and "cut outs."	i. Tumbler switches are placed in the nurses' rooms for dayrooms and dormitories. A key switch is used for each single room light. ii. No.

HOSPITALS, AND LICENSED HOUSES.—CONTINUED.

St. Andrew's Hospital, Northampton, for about 350 Patients. Built 60 years ago, much altered and improved.	Holloway Sanatorium for 350 Patients.	Hoxton House, London. No. of Patients 276.	Other Hospitals and Licensed Houses. London and Provincial.
<p>Yes.</p> <p>i. and ii. 60 ampères each (two batteries).</p> <p>iii. Supply a few night lights after engine stops 10 p.m.</p> <p>iv. No.</p> <p>i. Every day—sunset to 10 p.m., and from 5.30 a.m. till day-light.</p> <p>ii. No special men except one stoker who comes on duty at 1 noon, and remains on while the engine stops. The engineer and staff look after the electric lighting in addition to their ordinary duties.</p> <p>iii. —</p> <p>iv. General repairs and renewals, fixing all new machinery, horse-shoeing, etc.</p> <p>No.</p> <p>i. Direct.</p> <p>ii. Present average 196 ampères.</p> <p>iii. 115 volts in engine-room—lamps 110.</p> <p>i. By switches.</p> <p>ii. Yes, by turning off part of the light or a certain number of lamps.</p>	<p>Yes. 120 L 31 in two batteries.</p> <p>i. 120 ampère hours' capacity.</p> <p>ii. Charged every day.</p> <p>iii. Supply night light from 10 p.m. to 6 a.m.</p> <p>[These batteries will be done away with after this season, and shall then always run direct].</p> <p>ii. Two engine drivers and two stokers.</p> <p>iii. 70 hours per week in winter. 50 hours per week in summer.</p> <p>iv. Fully occupied on electric plant.</p> <p>Three distinct circuits from switch board in engine room, one for male, one for female, one for outside.</p> <p>i. Direct.</p> <p>ii. About 300 ampères.</p> <p>iii. 110 to 120 volts.</p> <p>i. and ii. By switching the lamps out separately, or by using lower candle-power lamps.</p>	<p>Yes.</p> <p>i. Two volts each.</p> <p>ii. Two volts each.</p> <p>iii. Cannot charge the accumulators when supplying the light direct.</p> <p>iv. No.</p> <p>i. Three times a week, six hours a day—during the day for accumulators, and in the evening until 8 p.m. for hall.</p> <p>ii. No special men—worked by engineer and stoker.</p> <p>No.</p> <p>i. Direct.</p> <p>ii. 30 ampères.</p> <p>iii. 40 volts.</p> <p>i. Ordinary switches.</p> <p>ii. No.</p>	<p>Dr. Seymour Tuke writes that they have had the electric light at Ohiswick House since May, 1893, working it for two years by steam power, which has now been replaced by a gas engine. Dr. Tuke has about 380 lamps, mostly 16 c.p., but some 8 c.p. The gas engine promises to work well [No. of patients, 35.]</p>

ENGLISH CITY AND BOROUGH ASYLUMS, LUNATIC

Questions.	Exeter City and Borough Asylum. Built 1886. No. of Patients about 400.	Sunderland Borough Asylum. Built 1883 and 1894. Opened 1893 for about 430 Patients.	Norwich City Asylum. Hillsideon. Opened 1880 for about 300 Patients.	Portsmouth Borough Asylum. Built 1879 for about 560 Patients.
9. Arrangements for recreation hall, chapel, dining halls, & single rooms — whether electrolliers, pendants, or brackets. [A rough sketch of some typical rooms, showing where lights are placed, would be useful.]	<i>Recreation Hall and Dining Hall</i> have bracket lights around the hall, and by one of two switches can light alternate lamps or all, a few pendants along centre of hall can be controlled by a separate switch. <i>Stage</i> has ceiling and footlights. <i>Chapel</i> is not lighted. <i>Single rooms</i> .—One lamp lights two rooms, and is placed in a glazed and guarded hollow in the partition wall between rooms.	<i>Recreation hall & chapel</i> have electrolliers. <i>Stage</i> has cluster and foot lights. <i>Single rooms</i> are lit by hanging lamps from corridors outside, except the padded rooms which have "oyster" lights in ceiling. No bracket lights are used.	Pendants, arc, and incandescent lamps.	Electrolliers (three light)—each of 32 c.p.
10. i. How are the lights controlled? ii. Is there a switch or tap to each?	A row of single rooms is lighted by one switch. The lamps in day room w.c.'s are controlled by the same switch as day room itself.	Switches. Single switches to lights in rooms, corridor; in the wards switch to one or more lights; in the stores there are five lights, arranged in twos and one for each switch.	Switches.	Switch to each.
11. Height of lamps from floor in feet? i. Day rooms? ii. Dormitories? iii. Other places?	i. About 8½ ft.	i. 8 ft. 6 in., and ii. 8 ft. 6 in. Dr. Elkins thinks these too high — difficult to sew or read. Danger of meddling much exaggerated. iii. A few pulley lights.	i., ii., and iii. Varies.	i. 8 ft. ii. 10 ft. iii. 10 ft.
12. i. Size of lamps (c.p. marked on lamp). ii. What distance apart—in feet? (a) Day rooms. (b) Dormitories. (c) Other places (corridors, etc.). iii. If arc lamps, where, what kind, and power? iv. How many hours per an. are lights burning?	i. 5, 8, 16, 20, 25 and 200 c.p. ii. (a) 16 c.p. at 12 feet. (b) 8 c.p. at 12 feet. (c) 8 c.p. at 20 feet. iii. None. iv. —	i. 240 8 c.p. 450 1½ c.p. 14 50 c.p. ii. (a) 10 ft. (b) 20 ft. (c) 60 ft. iii. None. iv. Cannot say.	i. Ordinary. ii. No fixed distance. iii. Arc lamps, four at 500 c.p. each. iv. When it is dark.	i. 16 c.p. in corridors and day rooms, 10 c.p. in single rooms and dormitories. ii. (a) 16 ft. (b) 16 ft. (c) 40 ft.

HOSPITALS, AND LICENSED HOUSES.—CONTINUED.

St. Andrew's Hospital, Northampton, for about 350 Patients. Built 60 years ago, much altered and improved.	Holloway Sanatorium for 350 Patients.	Hoxton House, London. No. of Patients 276.	Other Hospitals and Licensed Houses. London and Provincial.
<p><i>Recreation hall, 26 yards by 10 yards by 7 yards, lit by 30 lights in groups of 3 on side walls 14ft. from floor. The centre light in each group is 25 c.p., remainder 16 c.p. Two switches control the light, viz., one for ten 25 c.p., and one for twenty 16 c.p.</i></p> <p><i>In some smaller dining rooms combination electroliers (gas and electric light) are used, in others single light pendants controlled by switches in groups of 3, 4, and 5 lights.</i></p>	<p><i>Are lamps in recreation hall and dining hall. Theatre.—Glow lamps. Single rooms.—Flexible cord droplight, and some "oyster" light fittings in ceilings.</i></p>	<p><i>Hanging lamps, lit direct from dynamo.</i></p>	<p>One asylum, the name of which was not inserted in the answers received, which I have also failed to trace, and which may be a Scottish asylum, states that the electric light is used for a wing where private patients are received, but that they are also supplied with gas from a local company. The electric light was installed in 1891. Steam is obtained from two Cornish boilers working at 50 lbs. pressure and the exhaust steam is used for heating the laundry drying racks. One horizontal engine of six horse power and 160 revs. per minute is connected by belting to a shunt wound dynamo which makes 1,200 revs. per minute, and</p>
<p>By switches. One to each light only in small places or where the light is seldom required.</p>	<p>Switches.</p>	<p>Switches for two and four lights.</p>	
<p>i. 8ft. ii. and iii. About the same—except dining and recreation halls.</p>	<p>i. 7ft. 6in. ii. 10ft. iii. 8ft. in corridors.</p>	<p>i. 12 feet and 7 feet. ii. None. iii. 7 feet.</p>	
<p>i. From 8, 16, 25, to 50 c.p. ii. Varies considerably, according to height of rooms, corridors, etc., also according to decoration and position of rooms. In ordinary corridors lights are about 18ft. apart. iii. None. iv. About 2,000 hours the engine runs.</p>	<p>i. 16 c.p. in sitting-rooms and corridors, 8 c.p. in single rooms. ii. (a) — (b) — (c) — iii. Brush Vienna arc lamps 10 ampères. iv. —</p>	<p>i. 16 c.p. ii. (a) 10ft. (b) and (c) None. iii. No. iv. About 1,000 hours.</p>	

ENGLISH CITY AND BOROUGH ASYLUMS, LUNATIC

Questions.	Exeter City and Borough Asylum. Built 1886. No. of Patients about 400.	Sunderland Borough Asylum. Built 1863 and 1894. Opened 1896 for about 350 Patients.	Norwich City Asylum, Hillesdon. Opened 1880 for about 300 Patients.	Portsmouth Borough Asylum. Built 1879 for about 560 Patients.
13. First cost of— i. Machinery & plant. ii. Wiring & fittings. iii. Buildings (engine house, etc.)	—	i. and ii. Engine and dynamo, £1,230; accumulators, £360; 6 motors, £260; cables and wiring, £1,480; lamps and fittings, £483; switch board, etc., £120; superintendence, £50; total, £4,080. iii. —	i. and ii. Done by degrees. Plant fitted to engines. iii. No special engine house. Little at a time was done (so that there was no perceptible expenditure each quarter) until the whole institution was lighted with electricity.	—
14. Annual cost of working. i. Wages. ii. Rate of pay. iii. Coals—quantity & quality. iv. Sundries. v. Cost per English Board of Trade unit (1,000 watt hours) per an.	Owing to the same boiler generating steam for other work, the figures as to cost are difficult to get.	i. Engineer, 40s. with house and coal; engineman, 30s.; fitter, 32s.; stokers, 26s.; plumber, 35s.; each per week. .. *Fitter and stoker only engaged Oct.—April. iii. 6 tons Duff coal per day in winter at 4s. 6d.; 2 tons Duff coal per day in summer at 4s. 6d. v. —	Cannot define. v. No record.	v. We pay 5d. per B T unit to the Portsmouth corporation—which includes laying and maintaining the mains, etc.
15. i. Are any special means used to ensure economy? ii. What alterations (if any) would be beneficial?	i. Person in charge of each ward is responsible for the lights being only used when required. ii. More reserve.	i. The only lights burning after 10.30 p.m. are those in the observation dormitory, medical officers' quarters, and engine department. The patrol attendants carry lamps (oil). ii. —	i. Certainly, as you would gas. ii. Dr. Harris states the first thing he attacked on taking office was the "suicidal" light of the building. Starting at the opening in 1880 he may be looked upon as almost the "pioneer" in asylum electric lighting.	i. — ii. More lamps are required in day rooms, when the patients wish to read.

HOSPITALS, AND LICENSED HOUSES.—CONTINUED.

St. Andrew's Hospital, Northampton, for about 350 Patients. Built 60 years ago, much altered and improved.	Holloway Sanatorium for 350 Patients.	Hoxton House, London. No. of Patients 276.	Other Hospitals and Licensed Houses. London and Provincial.
<p>i. and ii. About £2,200 first cost, but considerable alterations and additions have been made since the commencement.</p> <p>iii. Old engine house utilised.</p>	<p>i. — ii. — iii. —</p>	<p>i., ii., and iii. About £250.</p>	
<p>The alterations and extensions in the buildings have been so numerous and the duties of the staff so mixed up with endless repairs, renewals, etc., that it has been found quite impossible to keep a reliable account of the electric lighting.</p>	<p>—</p>	<p>i. Uncertain. The dynamo is run with the laundry machinery. v. Uncertain.</p>	<p>has an output of 6 kilowatts. The statement continues that there are accumulators to supply 52 lamps for night use and that they can run these lamps (only 30 amperes) for ten hours. The generating plant is run from 6.30 a.m. until daylight, and from dusk until 10 p.m. It is worked by the general staff of the asylum. The current is direct and is of 50 volts supplying 10 to 50 lamps. These are about 10ft. 6in. from the floor and are of 16 c.p., being arranged in groups of three or four for each room. The light is reported to be satisfactory. I much regret being quite unable to say to what asylum this refers, and have entered the information here, as it relates to a wing for the accommodation of private patients.</p>
<p>i. The light is economically produced, because the same boiler - power and service is used, as would be required for general purposes. The exhaust steam is used for heating water.</p> <p>ii. A duplicate set—engine and dynamo would be an advantage, and are required.</p>	<p>—</p>	<p>i. Lamps only used when required. ii. More power is needed.</p>	

Questions.	Crichton Royal Institution, Dumfries. Estab. 1839. No. of beds 1,000.	Glasgow Royal Asylum. Estab. 1843. No. of beds 500.	Montrose Royal Asylum. Estab. 1781. No. of beds 600.	Royal Edinburgh Asylum, Craig House Department. Estab. 1886.
1. i. If gas is used, then cost of making per 1,000 cubic feet—including repair and maintenance of gas works and mains? ii. If electric light, when inaugurated?	i. None used. ii. Electric lighting put up by a contractor under the personal direction of Dr. Bottomley, F.R.S. Dr. Rutherford chose the positions and all the fittings, etc.	i. — ii. Electric installation erected 1889, by Anderson & Munro, Glasgow, through Mr. W. A. Bryson.	i. Gas is used in some dormitories and corridors; also in kitchen for cooking, supplied from Montrose at 5s. per 1,000 c.f. ii. Electric light in 1890. Carried out by Mavor & Coulson, through Mr. W. A. Bryson.	i. No gas used. ii. 1895, about 24 yrs. Put in by Messrs. Ernest Scott and Mountain, Newcastle-on-Tyne, through Mr. W. A. Bryson.
2. Boilers— i. Number? ii. Type? iii. Working pressure? iv. Is any use made of exhaust steam?	i. Three; 28ft. by 7ft. ii. Galloway, hand stoked; Green's economisers. iii. About 60 lbs. iv. Only for heating feed water. The steam for heating, cooking, & laundry goes from boilers direct through reducing valves.	i. Three—two working and one spare. ii. Cornish. iii. 50lbs. iv. Yes, heating water for boilers and wash-house.	i. Three. ii. Two Babcock and Wilcox water tube, one Robey's locomotive. iii. 80lbs. iv. No.	i. Two. Boilers do cooking, heating, and ventilating besides electric light. ii. Lancashire, 25ft. by 7ft. 6in. iii. 120lbs. iv. No; but the feed water is heated from boiler thro' a "Wright's" feed water heater.
3. Engines— i. Number? ii. Type? iii. Horse power? iv. No. of revolutions per min.? v. How connected with dynamos, viz., if direct coupled, ropes or belt?	i. Three. ii. Simple single cylinder, non-condensing. iii. and iv. Two called 60 h.p., but capable of a good deal more (say 100 h.p. easily) at 63 revolutions. One called 24 h.p., but which works regularly to more than 40, at 100 revolutions. v. Belts—double orange tan, by Tullis. [Dr. Bottomley states "good light broad belts are of the utmost importance."]	i. Pair engines (coupled) but can be used separately. ii. Horizontal. iii. 40 normal h.p. iv. 92. v. Belts and counter shafts.	i. Two. ii. One Robey's single expansion and one horizontal. iii. 20 h.p. each. iv. 350 revolutions. v. Belt.	i. Four. ii. Robey's compound, horizontal, high speed. iii. 60 h.p. each. iv. 120 to 130. v. Belts (link).
4. Dynamos— i. Number? ii. Shunt or compound wound? If Shunt wound— (a) What means of regulating the electromotive force? (b) Is a recording voltmeter used? iii. No. revolutions per min.? iv. Maximum output in kilo-watts?	i. Three. ii. Shunt. (a) Resistances in shunt, but worked at switch board. (b) No, but electrostatic voltmeter (Lord Kelvin's patent) on every circuit, and an engine room voltmeter is visible through whole engine room. iii. Two at 460; one at 600. iv. Two 400 ampères 110-135 volts. One 200 ampères 100-135 volts.	i. Two. ii. One a Goolden's shunt, for charging accumulators, and one of Latimer, Clark and Muirhead, for running all the lights direct. (a) — (b) — iii. & iv. The direct 400 revolutions with a voltage of 104 and 300 ampères. The shunt dynamos 720 revs., 135 volts, 90 amp.	i. Two (Manchester dynamos). ii. Shunt— (a) Simply by giving engines more or less steam. (b) No. iii. 1,200. iv. 14,920 kilo-watts.	i. Four. ii. Compound wound each with recording ampère meter & voltmeter, one machine having a special switch for cuarging accumulator. (a) and (b) not recording. iii. 700. iv. Total watts 25,200, ampères 240, volts 105.

ASYLUMS.

Lanark District Asylum, Estab. 1895. No. of beds 550.	Dundee Royal Asylum, Estab. 1884. No. of beds 470.	City of Glasgow District Asylum and Hospital for Mental Diseases at Gart- loch. Built 1897.	Perth District Asylum, Murthly. Built 1867. No. of Patients 350.	Aberdeen Royal Asylum.
<p>i. — ii. April, 1895.</p> <p>i. Three. ii. Galloway's. iii. 100lbs. iv. Feed boilers.</p>	<p>i. Gas supplied by the Dundee Gas Commissioners from town mains; 4s. 4d. per 1 000 c.f. ii. 1897, Feb., installation now being put down.</p> <p>i. One. ii. Locomotive. iii. 126 lbs. iv. Not at present.</p>	<p>i. Gas as an illuminant not used anywhere ii. With the building of asylum (which is not yet fully opened). Contractors, Claud Hamilton Ltd.</p> <p>i. Three. ii. Lancashire boilers & mechanical stokers. iii. 100 lbs. iv. Heats the water.</p>	<p>i. Yes, gas is used in case of necessity. ii. Used over a year to specification and under supervision of W. A. Bryson, consulting engineer, 11, Bothwell Street, Glasgow. Contractors, Anderson and Munro, Glasgow, '86.</p> <p>i. Two. ii. Lancashire. iii. 60 lbs. per sq. in. iv. Not at present.</p>	<p>Answers not received to questions, and no details given.</p>
<p>i. Three. ii. Robey's compound. iii. 25 h.p. nominal. iv. 13s. v. Belts.</p>	<p>i. One. ii. High speed, single acting (by Willans & Robinson). iii. 60 h.p. iv. 470 rev. v. Direct.</p>	<p>i. Three. ii. Vertical high-speed compound. iii. 60 h.p. each. iv. 300-320. v. Direct, each coupled to its own dynamo.</p>	<p>i. One. ii. Robey's slow speed horizontal (less liable to break down than high speed engine?) Class "2" with Richardson's triple valved gear 15$\frac{1}{2}$in. by 23in. iii. 76 h.p. iv. 90 revs. per min.</p>	<p>i. — ii. Gas engines. (Dr. Robertson).</p>
<p>i. Three. ii. Shunt. (a) Wire resistance. (b) Voltmeter, but not recording. iii. — iv. 24 hours, 1'112</p>	<p>i. One. ii. Shunt. (a) Variable resistance in the circuit of field magnet. (b) No. iii. 470 rev. iv. 26.2 k.w.</p>	<p>i. Three. ii. Compound wound iii. Same as engines, 300. iv. —</p>	<p>Five blocks are lighted and there are 640 lights run from a Siemens dynamo. i. One Siemens. ii. Compound wound. (b) Voltmeter and anometer of Lord Kelvin's type. iii. 700 revs. iv. 380 ampères, 105 volts, 40 kilo-watts.</p>	<p>i. Two. 320 am- père dyn. (Dr Robertson).</p>

Questions.	Crichton Royal Institution, Dumfries. Estab. 1839. No. of beds 1,000.	Glasgow Royal Asylum. Estab. 1843. No. of beds 500.	Montrose Royal Asylum. Estab. 1781. No. of beds 600.	Royal Edinburgh Asylum, Craig House Departments. Estab. 1895.
v. Are there accumulators? i. What capacity? ii. When charged? iii. When supplying the light? iv. Do they work any motors?	Yes. Sixty cells (could work quite well with 58 cells). i. 1,300 ampère hours. iv. Yes, five or six now, for various machines in laundry, electric lift, farm work at farm steading.	Yes. i. 510 ampère hours. iv. No.	Yes. A small battery. i. 600 ampère hours. iv. No.	i. Accumulators now being fed for about 100 lights. ii. 100 lights, charged during the day and supply light at night.
vi. i. How long is the generating plant run? and when? ii. What number of men are employed, and what are their special duties? iii. Hours of work per day or week? iv. What other duties do they perform if not fully occupied on the electric plant?	i. 6.30 a.m. till lights turned off in morning. Dusk to 8 p.m. Accumulators from 8 p.m. to 6.30 a.m. ii. One electrician, and one stoker; but there is a second electrician & stoker who work at other duties when not required on the light. These are supervised by consulting electrician and a clerk of works. iii. Nine a day. iv. General engineering work.	i. Between 6.30 a.m. and 9.40 p.m. after which burn off accumulators, which are charged about every fourth day. Engines stop running each night at 9.40 p.m. ii. Two men. Day is divided into two shifts, with every alternate Saturday and Sunday off. iii. — iv. The same men and plant do all laundry work, also part of cooking (steam).	i. Direct: 6 a.m. till daylight and dusk to 10 p.m. Accumulator: 10 p.m. to 6 a.m. These are charged in the forenoon. ii. and iii. One electrician, acting as "master of works" during day, and running the plant from 7 to 10 p.m.—84 hours per week. One stoker who charges cells and stokes boilers morning and forenoon. He leaves at 1 p.m., returns at dusk and runs the light till 7 p.m., when he is relieved by electrician. Average hours 55 per week. iv. —	i. Run daily when lights are required. Plant been about two years in use. ii. Three engineers, 3 stokers, 1 lad. iii. Engineers various. Stokers work 8 hours a day. iv. — In addition to two boilers for electric lighting there are four boilers for heating, all attended to by same staff, about six men, who look after entire lighting, heating and ventilating day and night.
vii. Is there more than one circuit? i. Direct or alternating? ii. Current used? iii. What voltage?	Three. i. Direct. ii. Varies from hour to hour. iii. 110 volts.	A main and a patrol circuit. i. Direct. ii. No means of measurement when running direct. iii. 105 volts.	Three (a) Main building. (b) Recreation hall. (c) Hospital and Superintendent's house. i. Direct. ii. 160 ampères. iii. 102 volts.	About 12 circuits. i. Direct. ii. 230-250 ampères, continuous. iii. 105 volts.

ASYLUMS.—CONTINUED.

<p>mark District Asylum. Etab. 1895. No. of beds 550.</p>	<p>Dundee Royal Asylum. Etab. 1884. No. of beds 470.</p>	<p>City of Glasgow District Asylum and Hospital for Mental Diseases at Gart- loch. Built 1897.</p>	<p>Perth District Asylum, Muthly. Built 1867. No. of Patients 350.</p>	<p>Aberdeen Royal Asylum.</p>
<p>Yes. i. 500 ampère hours. 7. Two. One 8-h.p. and one 4-h.p.</p>	<p>Yes. i. 100 kilowatt hours. iv. Not at present.</p>	<p>No.</p>	<p>"No—the old gas holder is kept charged in case of accident, but I think they are necessary evils, and you want a strong battery to drive the rotatory centrifugal drying machines if you do not work an engine. A large place must be differ- ent to work from a small one. We have several Blackman's fans (12 and 18ins. —they cost £1 an inch and £3 to £3 to put in), and they only use the electri- city of three to six lights."</p>	
<p>i. 6 a.m. to 8.30 a.m., and 4.0 p.m. to 10.0 p.m. Accumulators charged 4.0 to 8.0 p.m., and supply light from 10.0 p.m. to 8.0 a.m. ii. One engineer & two firemen. Engineer attends to engines and dynamos, accu- mulators and the re- pairs throughout the asylum. The firemen fire boilers, attend to pumps and clean the en- gines, &c.</p>	<p>Not yet (March, 1897) settled and in work- ing order.</p>	<p>i. Just now (March, 1897) the plant is run from 6 a.m. till daylight, and from dusk till 10 p.m. When the building is fully opened, it will be run all night and whenever arti- ficial light is re- quired. ii. At present three men only are employed, but the full staff is five. iv. The chief engineer supervises this plant, as also that of the heating, ventilation and laundry.</p>	<p>There is a night shift to keep engine running for pilot circuit, or full number of lights, should occasion arise i. All night from dusk to sunrise. ii. Two, and they keep the electric light running and in good order; they work each 12 hours per day, and are fully occupied with the lighting.</p>	<p>[No answers re- ceived.]</p>
<p>One to each block. i. Direct. ii. Highest current used for direct lighting is 470 ampères. iii. 100 volts.</p>	<p>Yes. i. Direct. ii. 135 ampères. iii. 200 volts.</p>	<p>One circuit. i. Direct. ii. — iii. 110 volts.</p>	<p>Seven main circuits. i. Continuous current. ii. Maximum load 360 ampères. iii. EMF 105 volts.</p>	

Questions.	Crichton Royal Institution, Dumfries. Estab. 1839. No. of beds 1,000.	Glasgow Royal Asylum. Estab. 1843. No. of beds 500.	Montrose Royal Asylum. Estab. 1781. No. of beds 600.	Royal Edinburgh Asylum, Craig House Department. Estab. 1856.
8. i. How are lights managed in rooms? ii. Can the illuminating power be decreased? If so, where, and by what means?	i. Switch to every fitting. ii. No.	i. Light is placed over the doors of single rooms, and controlled by a switch outside each. ii. No.	i. In central position, a drop switch controls a whole ward, in which are also "key" or "tumbler" switches commanded by attendants. ii. No, except in recreation hall.	i. Switches outside with keys. ii. Yes, by "resistance switches" outside room doors in padded rooms.
9. Arrangements for recreation hall, chapel, dining halls & single rooms — whether electrolliers, pendants, or brackets. [A rough sketch of typical rooms, showing where lights are placed, would be useful.]	—	Pendants. Footlights for stage.	Recreation hall & chapel. One 20-light and two 10-light electrolliers in body of hall and chapel. "Tree" lamps in gallery. Stage.— One lamp in each dressing room, 21 footlights, 3 rows of fly lights (13 lamps in each), also prompter's light—all of 16 c.p.; all controlled on stage, and all reduced at will by means of resistance coils.	Recreation hall.—Large electrolliers with side brackets. Dining room.—Electrolliers. Single rooms.—Ornamental pendants. Corridors.—Ornamental pendants.
10. i. How are the lights controlled? ii. Is there a switch or tap to each?	ii. Switch to every fitting.	i. Switches. ii. Yes, unless in large dining hall, where there are four switches for the different portions. One switch controls all the lights in the small hall.	i. In wards a switch to each one half of lights (e.g., where there are 6 lights 3 are on one switch and 3 on the other.) ii. No.	i. Switches. ii. One for every separate room and single light. The whole of the switches (except in attendant rooms) are of special counter sunk type with main key.

ASYLUMS.—CONTINUED.

Anark District Asylum. Etab. 1895. No. of beds 550.	Dundee Royal Asylum, Etab. 1884. No. of beds 470.	City of Glasgow District Asylum and Hospital for Mental Diseases at Gart- loch. Built 1897.	Perth District Asylum, Murthly. Built 1867. No. of patients 350.	Aberdeen Royal Asylum.
<p>Switches—see below. Reducing switches.</p>	<p>i. All day rooms and public rooms have switches at entrance, also all passages. All dormitories and bedrooms have switches outside entrance.</p> <p>ii. No.</p>	<p>In <i>single rooms</i> for noisy and troublesome patients, bulkhead light in ceiling, controlled by switch outside. These have each a resistance switch, so that the light can be made of three degrees of brightness at the wish of the night nurse during a visit.</p> <p>In <i>other single rooms</i> there is a simple drop pendant with opal shade 7ft. 6in. to 8ft. from floor.</p>	<p>i. A switch to every light except in recreation hall 650 lights. There are no resistance switches used.</p>	
<p>Electroliers, pendants, brackets. <i>Single rooms</i>—lights are hung from door lintels.</p>	<p><i>Dining hall</i>.—Pendant fittings in centre, with brackets at sides. Electroliers only in private apartments of officials.</p>	<p><i>Recreation hall</i>.—Arc lamps in hall, incandescent on stage, which is lighted from ceiling lights and foot lights.</p> <p><i>Dining hall</i>.—Incandescent 100 c.p. lamps. Official blocks, nurses' rooms, staff quarters, have either electroliers, pendants, brackets, or incandescent single lamps. In some of the day rooms there are pulley lights—so that they can be raised or lowered.</p>	<p><i>Recreation hall and dining room</i>.—Clusters in suspension fittings.</p> <p><i>Single rooms</i>.—Suspension fittings.</p> <p><i>Dormitories</i>.—Bulkhead fittings.</p>	<p>[No answers received.]</p>
<p>Switches—in groups.</p>	<p>485 switches for 582 lights.</p>	<p>Almost every lamp has a separate switch. In day rooms and dormitories these are collected on a switch board placed either inside or outside the ward.</p>	<p>See 3.</p>	

Questions.	Crichton Royal Institution, Dumfries. Estab. 1839. No. of beds 1,000.	Glasgow Royal Asylum. Estab. 1843. No. of beds 500.	Montrose Royal Asylum Estab. 1781. No. of beds 500.	Royal Edinburgh Asylum, Craig House Department. Estab. 1835.
11. Height of lamps from floor in feet. i. Day rooms. ii. Dormitories. iii. Other places.	—	i. Males 7ft. 9in., females 7ft. 3in. ii. About same height, but single patrol lights are higher. iii. Above doors in bedrooms guarded with wire panels.	i. 8ft. ii. 7ft. 6in. iii. 7ft., and where required made to pull up or down by sliding pendants.	i. ii. and iii. 8ft. and various.
12. i. Size of lamps (c.p. marked on lamp.) ii. What distance apart in feet? (a) Day rooms. (b) Dormitories. (c) Other places. iii. If arc lamps, where, what kind and power? iv. How many hours per annum are lights burning?	i. 1,280 16 c.p. lamps, & 7 100 c.p. lamps. iii. Six Siemen's arc lamps in engine room taking 7½ ampères each iv. All lights are burned up to 8 p.m., afterwards only those absolutely necessary.	i. Five c.p. in some bedrooms and back stairs; 8 and 16 c.p. throughout house; 50 c.p. in small, 100 c.p. in large hall. ii. (a & b & c) Generally 18ft. apart, but it must depend on the c.p. There are some clusters of from 5-16 c.p. in one lamp. iii. No. iv. Depends on daylight, also on need for light in single rooms by night, which again depends on condition of patients.	i. 16 c.p. high efficiency lamps (i.e., 2½ watts). ii. (a) 11ft. (b) 12ft. (c) 18ft. iii. One arc lamp in dining hall for paupers "Jandus." iv. 1,700.	i. 16 and 32 c.p., about 1,350 lights used ii. In the principal rooms all lights are about 7ft. from floor. iii. No. iv. Cannot say yet.
13. First cost of— i. Machinery & plant. ii. Wiring & fittings. iii. Buildings (engine house, etc.)	The whole cost was about £15,000. This includes £5,000 for buildings and boilers; also cost of erection, fittings, lamps, &c., &c. Also, there is provision for doubling the lighting so far as building and engine and dynamo foundation, &c., are concerned.	Cannot give this, as so much other work is done with engines and boilers.	i. and ii. £1,840 19s. 7d. iii. Old building remodelled, £200.	i. ii. and iii. A little over £7,000, which includes engine, boilers, dynamo, wiring and fittings, exclusive of engine house.

ASYLUMS.—CONTINUED.

<p>Perth District Asylum. Estab. 1895. No. of beds 550.</p>	<p>Dundee Royal Asylum. Estab. 1884. No of beds 470.</p>	<p>City of Glasgow District Asylum and Hospital for Mental Diseases at Gart- loch. Built 1897.</p>	<p>Perth District Asylum. Murthly. Built 1867. No. of Patients 350.</p>	<p>Aberdeen Royal Asylum.</p>
<p>—</p>	<p>Vary according to height of rooms, which vary in themselves.</p>	<p>i. 7ft. 6in. and 8ft. 3in. according to class of cases. ii. 8ft. 6in. almost generally. iii. 9ft. in official corridors, almost on roof of connecting corridors. From 8ft. to 9ft. in nurses' rooms and official blocks, depending on size, height, &c., of rooms.</p>	<p>Dr. George M. Robertson states "I think about one light 16 c.p. to 135 sq. ft. (or 4½ patients in Scotland) is good lighting for dayrooms, but one to 150 sq. ft. would do very well if the room is light coloured. In the bedrooms half this is enough, 16 c.p. is the best size, but 8 c.p. will do in single rooms, passages, & corners. In passages place the switches at convenient points so that you can light your way as you go along. I place my switches 6ft. from the floor, out of the way of temptation for patients to interfere with them—as this involves an effort to reach them.</p>	<p>—</p>
<p>Eight 150 c.p. — Average 12 hours a day for six months.</p>	<p>i. All sizes from 8 to 100 c.p. ii. (a, b, and c). No fixed distance—spaced according to requirements. iii. No. iv. —</p>	<p>i. From 8 to 50 c.p. ii. (a, b, and c). Vary. iii. "Jandus" arc lamps in the recreation hall only. iv. Cannot yet tell.</p>	<p>8ft. 6in. to 10ft. 640 lights are used. i. 16 c.p. ii. See 11. iii. No. iv. 2,469 hours.</p>	<p>[No answers received.]</p>
<p>—</p>	<p>i. £958 0s. 0d. ii. Including battery, £1,588 17s. iii. Portion of present engine-house is being utilised.</p>	<p>i. and ii. Contract for electric lighting amounted to £8,000, exclusive of boilers, £1,800. The sum will probably reach £1,500 more than contract. iii. The accounts not being yet definitely settled, and the original plans having been considerably departed from, it is not possible to give accurate cost.</p>	<p>Cost excluding boilers or engine-house £1,978 13s. 7d. i. £714 10s. 0d. ii. £1,264 2s. 7d. which includes electric fans and telephones.</p>	<p>—</p>

Questions.	Crichton Royal Institution, Dumfries. Estab. 1839. No. of beds 1,000.	Glasgow Royal Asylum. Estab. 1843. No. of beds 500.	Montrose Royal Asylum. Estab. 1781. No. of beds 500.	Royal Edinburgh Asylum, Craig Hoskington Department. Estab. 1895.
14. Annual cost of working— i. Wages. ii. Rate of pay. iii. Coals, quantity & quality? iv. Sundries. v. Cost per English Board of Trade unit (1,000 watt hours) per an.	i. One electrician at £120 per an., and 1 additional stoker (during winter only) are the only additional people employed. ii. Three tons daily for all purposes at 5s 6d, cannot separate coals for E.L. iv. — v. —	i. and ii. One man £78 with free house. One man £48, with free bed and board. ii. Cannot definitely state. iv. — v. —	i. Electrician £100, free house and coals. ii. Stoker 22s. weekly. iii. 100 tons washed Pease at 9s. 6d. = £47 10s. 0d. iv. Oil and waste, £17 2s. Renewals, £19 14s. 10d. Depreciation, £100. v. Cannot tell for want of reliable instruments.	i. and ii. Engineer's wages are 45s., 34s. 30s. per week. L. 10s. Stokers 27s., 25s., 23s. per week. iii. Coals are all put into one coal-house. iv. — v. Cannot say, as cannot give annual cost, as the staff employed on ventilation, heating &c., as well as lighting.
15. i. Are any special means used to ensure economy? ii. What alterations (if any) would be beneficial?	i. Strict rules, and a good recording ampere metre on the circuits. ii. Dr. Rutherford states that he has never had a moment's trouble or anxiety—either with the lighting, or with its use as a motor, lifts, &c.	i. Attendants & nurses switch off lights as soon as they cease to be required. ii. Dr. Yellowlees and his master of works, Mr. D. Wilson, state that the installation suits the purpose well. Dr. Yellowlees states that in this asylum they have used the electric light since 1889, being the first in Scotland to adopt it. He also states that for (a) brilliancy, (b) cleanliness, (c) health, (d) safety and (e) convenience it is far better than gas.	i. Remodelling and increasing their plant and the question of economy is engaging attention. It is economical to multiply switches. ii. Requirements—higher efficiency by compounding engines, heating feed water with exhaust steam, and larger storage battery to avoid running engines when load is light.	i. Turn lights on when not required. The greatest economy has been considered by dividing the installation into a large number of circuits with switches. ii. Dr. Clouston states the light is entirely satisfactory but costly, and accumulators are not being put in as referred to.

ASYLUMS.—CONTINUED.

Lanark District Asylum. Estab. 1895. No. of beds 550.	Dundee Royal Asylum. Estab. 1884. No. of beds 470.	City of Glasgow District Asylum and Hospital for Mental Diseases at Gart- loch. Built 1897.	Perth District Asylum, Murthly. Built 1867. No. of Patients 350.	Aberdeen Royal Asylum.
—	—	Not working for a year yet.	<p>"The cost is heavier than gas, and I know of no asylum where electricity has been made cheaply."—G. M. R.</p> <p>i. and ii. £105 (engineer, £75, engineer, £30).</p> <p>iii. McFarlane, 415 tons 3 cwt.</p> <p>iv. £4 8s. 6d.</p> <p>v. Nearly 3½d.</p>	
<p>i. —</p> <p>ii. Reported to be quite satisfactory.</p>	<p>It is stated that workmen were at present (February) putting up the electric light fixing all over the house; also that there was a separate installation for Gray House—for private patients—and that the dynamo at this house was to be driven by an oil engine.</p>	<p>i. Special instructions to the staff and continual supervision of the lower officials by the higher.</p> <p>ii. Dr. Oswald thinks that storage cells may in the near future be required.</p>	<p>Dr. Robertson states "I consider electricity to be the ideal and perfect light for an asylum for the following reasons:—</p> <ol style="list-style-type: none"> 1. Absence of danger from fire, no setting on fire from a gas flame, no escape of gas, no interferences with gas pipes. 2. Ease of lighting and putting out. 3. Cleanliness. Half the house every year had to be white-washed on account of gas. We now have paper ceilings and they remain quite clean, and we are saved all the bother of annual white-washing. 4. Light. The asylum with gas could not be said to have been lighted. It is now excellently lighted, and the change was like coming from dusk to sunshine. It has made the patients very much brighter in the evenings;—light alone seems to have had a cheering effect. 5. Health and ventilation. The rooms do not get nearly so stuffy. Also, electricity is a motor power, and we have several small Blackman's fans to assist ventilation near the large dormitories and boot rooms where soaked boots dry better than by heat." 	[No answers received.]

Questions.	Hainault Lodge, Romford, Essex. Frederick Green, Esq.	Private House in Perth, N.B. Belonging to — Pullar, Esq.	The Cottage, Dundee. James C. Cox, Esq.
i. When was electric light inaugurated?	1886.	—	Contractors—Lowden & Co. Dundee.
2. Boilers— i. Number? ii. Type? iii. Working pressure? iv. Is any use made of exhaust steam?	i. One. ii. Davey Paxman. iii. 60 lbs. iv. No.	—	—
3. Engines— i. Number? ii. Type? iii. Horse power? iv. No. of revolutions per min.? v. How connected to dynamo, viz., if direct coupled, ropes, or belt?	i. One. ii. Vertical. iii. 6 h.p. nominal. iv. — v. Belt.	i. One. ii. Tangye "Otto Cycle." iii. Four brake. iv. 200. v. Short drive by means of 4in. Scandinavian belt.	i. One. ii. Tangye "Gas Engine." iii. 3 actual h.p. iv. 180. v. Belt.
4. Dynamos— i. Number? ii. Shunt or compound wound? If shunt wound? (a) What means of regulating the electromotive force? (b) Is a recording voltmeter used? iii. No. of revolutions per min.? iv. Maximum output in kilowatts?	i. One. ii. Shunt. (a) Not necessary for small installation. (b) No. iii. — iv. 3½.	i. One "Castle" No. 8 C. ii. Shunt wound. (a) EMF regulated by adjustable resistance in series with shunt coils. (b) No, a "Castle" constant or intermittent-reading voltmeter. iii. 1,200 revs. iv. 4½.	i. One. ii. Shunt. (a) By speed of engine. (b) No. iii. 1,050 revs. iv. Three.
. Are there accumulators? i. What capacity? ii. When are they charged? iii. When do they supply the light? iv. Do they work any motors? v. No. of men employed? vi. How long is generating plant run?	Yes. Electrical power storage accumulators. i. 52½ ampère hours at 62 ampères. ii. Three or four times a week depending on discharge. iii. Every evening. iv. — v. — vi. —	Yes. 53 E.P.S. by 15 plate "L" type. i. 300 ampère hours. ii. Early morning. iii. Early morning and late at night. iv. One ½ h.p. motor for hoist. v. — vi. Once a week in summer for 3–4 hours; once a day in winter for 4 hours.	Yes. i. 245 ampère hours. ii. — iii. — iv. — v. No special men employed. Gardener attends. vi. Every second day for six hours.

HOUSES.

Woodlands, Ticehurst, Sussex. A. S. Newington, Esq.	Benmore House, Kilmun, Argyllshire. H. J. Younger Esq.	Grey Towers, Nunthorpe, Yorkshire. A. J. Dorman, Esq.	Needwoodside, near Burton on-Trent. Lewis Meakin, Esq. <i>Penrhôs, Carnarvon.</i> <i>W. H. Preece, Esq.</i>
—	Contractors—Scott & Mountain, Newcastle-on-Tyne.	Contractors—Scott & Mountain, Newcastle-on-Tyne, who will give all estimates.	1896. <i>Proprietor.</i>
—	—	i. One. ii. Cornish, 18ft. by 5ft. 6in., with Hopkinson's mount- ings. iii. 80 lbs. iv. —	i. One. ii. Galloway. iii. — iv. Used to heat feed water. i. One, which has been sub- stituted for oil engine owing to the strong and very objectionable smell. <i>Mr. Preece prefers turbine where practicable.</i>
i. One. ii. Britannia oil engine. iii. 3½ brake. iv. 260. v. Belt.	i. and ii. An oil engine of Messrs. Priestman Bros., provided with self-starter, so that one man could start engine. iii. 22 effective h.p. iv. 180 revs. v. —	i. One. ii. Vertical single cylinder (12in. diameter by 10in. stroke). iii. 85 effective h.p. iv. 250 revs., controlled by Pickering governor and equilibrium throttling valve. v. Belt.	i. One. ii. Willans' type. iii. — iv. — v. Machinery duplicate. i. One. ii. <i>Davey Paxman upright.</i> iii. 3-4.
i. One—Taunton. ii. Compound wound, but only shunt used. (a) Regulating speed of engine by withholding or increasing petro- leum. (b) Yes. iii. 1,800. iv. —	i. One "Scott & Mountain" ii. Shunt. (a) Switch for adding extra cells, when EMF falls. (b) Voltmeter to read to 150 volts. iii. 900 revs. iv. 100 ampères 145 volts.	i. One "Scott & Mountain" improved type, with drum bar armature. ii. Shunt. iii. 800. iv. 140 ampères, 145 volts.	i. — ii. Compound.
Yes. 27 Epstein M. 3. i. Sixteen 16 c.p. 12 hours, 28 16 c.p. 6 hours, 40 16 c.p. 3 hours. ii. About one hour a day for charging and cleaning. iii. During night. iv. No. v. No special men. Under- gardener sets engine in motion and leaves it to go on with other work. vi. During winter about 4½ hours twice a week, in summer 4 hours once in 7-10 days.	Yes. 55 cells, 23 K type. i. 151 16 c.p. for 3½ hours when fully charged. The accumulators fixed in house near engine house on brick settles 9in by 14in. wide. Each cell in wooden tray, supported by four oil insulators, and covered with curved spray plate.	Yes. 55 cells, 33 E.P.S.—K type i. Feeding 2.5 16 c.p. lamps for 3½ hours. ii. — iii. — iv. Two motors of two h.p. each, for laundry machin- ery and pumping water into house—latter through two lengths each of 300 yards of cable. v. — vi. — The accumulators are con- nected to the main switch- board by 15 cables, which are also connected to the 15 last cells of the battery, so that, if desired, the battery can be charged, whilst the house lights are being run.	The accumulators should be used with a gas engine, but are not necessary if machinery is duplicate and motor steam. <i>Yes. Blots—a French make of accumulator. They are very clean and satis- factory, being of alternate layers of flat and corru- gated pieces of pure lead. They are charged once or twice a week and looked after by an under-gar- dener. The acid fluid is covered with white vase- line oil to prevent evapora- tion, etc.</i>

Questions.	Halnault Lodge, Romford, Essex. Frederick Green, Esq.	Private House in Perth, N.B. Belonging to — Pullar, Esq.	The Cottage, Dundee. James C. Cox, Esq.
6. Is there more than one circuit? i. Direct? ii. Current used? iii. What voltage? iv. Can light be decreased? If so, how? v. What kind of switch, and how many?	i. Direct. ii. — iii. 50 volts. iv. — v. One to each light.	Three main circuits and 3 branch. i. Direct. ii. 25 amperes. iii. 100 volts. iv. Range of illuminating power from 106—48 volts by means of regulating bars on main switchboard. v. Two way switches in places to ensure economy.	One circuit. i. Direct. ii. According to number of lamps. iii. 50 volts. iv. By regulating the switch at dynamo. v. One to each light.
7. First cost— i. Machinery and plant. ii. Wiring and fittings. iii. Buildings (Engine house, etc.) iv. Cost per B.O.T. unit per an.	Neither the Electric Power Storage Company nor Mr. Green are able to give the exact amount as the installation dates from 1886.	—	i. and ii. About £300. iii. About £100.
8. Annual cost— i. Wages. ii. Coals—quantity and quality. iii. Sundries.	—	—	—
9. Remarks and suggestions.	Satisfactory.	—	—

HOUSES.—CONTINUED.

Woodlands, Ticehurst, Sussex. A. S. Newington, Esq.	Benmore House, Kilmun, Argyllshire. H. J. Younger, Esq.	Grey Towers, Nunthorpe, Yorkshire. A. J. Dorman, Esq.	Needwoodside, near Burton- on-Trent. Lewis Meakin, Esq. Pearbós, Carnarvon. W. H. Freese, Esq.
<p>One circuit. i. Direct. ii. — iii. 50 volts. iv. By replacing lamp for one of lower c.p. v. Ordinary roller. One to single and cluster lights.</p>	<p>One circuit with numerous sub-circuits. i. and ii. Wiring for 200 16 c.p. lamps. Not more than 6—8 lamps on a circuit. iii. 145 volts. iv. — v. "Tumler" two switches when more than two lights to a fitting.</p>	<p>One, with branches to economise current. i. and ii. Wiring for 200 16 c.p. lamps. Each circuit has 6—8 lamps. iii. 145 volts. iv. — v. "Tumler" switches, two when more than two lights to a fitting, and a large number of branch switches to economise current.</p>	<p>Direct, which is better with a small installation. The light is controlled by corridor switches, or from one distributing board. It cannot be diminished by resistance coils as it would be wasteful of current. The lights are arranged mostly in pendants with a switch to each, about 10 feet from the floor, 8 c.p. are used in bedrooms, 16 c.p. elsewhere.</p>
<p>i., ii., and iii. £280.</p>	<p>£1,800, including all extras.</p>	<p>£1,800 for boilers, engine, and machinery, wiring fittings, and general plant, except laundry and farmstead. Motors £200 extra.</p>	<p>Mr. Freese has only one circuit. His wiring is original, as in rooms the current is carried to 8 c.p. lamps by means of insulated cords supported on the ceiling by brass hooks, all within sight. In passages the wire is carried in lead tubes like a bell wire. Mr. Freese stated that this method of wiring in rooms becomes tenant's and not landlord's fixtures. He also states that 60 volts and 8 c.p. is more suitable for small installations of about 50 lamps. He states also that the cost of electric light for private houses need not cost more than £4 or £5 a lamp when the motor is steam, less when water is convenient to use turbines. Mr. Freese has the switchboard in a passage at the back of the dining room; on it he has a voltmeter and ammeter. He has several plugs about rooms for portable lamps when required.</p>
<p>Nominal. Petroleum, lubricants, etc., £11.</p>	<p>—</p>	<p>—</p>	<p>—</p>
<p>Newington states that his lighting is very satisfactory, having gone over a year without mishap to the lighting, which has been continuous. He states that he found a few faulty connections in out of the way places which were easily found by the galvanometer and remedied. Mr. Newington is very expert and makes his own lamps for heating the explosion tube, which, with other improvements readily adapted, greatly minimise any anxiety.</p>	<p>The Main Switchboard has one main dynamo switch with double-pole fuses; one main switch for house with double-pole fuses; one switch arranged—(a) To charge accumulators. (b) To discharge accumulators through the lamps. (c) Run dynamo and accumulators together. (d) Run lamps direct from dynamo. One 5 contact for adding extra cells when EMF falls; one automatic cut in and out of circuit as required; one voltmeter; one ampere meter to 150 in main circuit to house; one ampere meter to 100 from charging circuit between dynamo and accumulators. Main Cables insulated with vulcanised bitumen in wooden troughs with solid bitumen. Insulation resistance of cables minimum of 600 megohms per mile, and arranged for current density of not more than 1,000 ampères per square inch of copper. Distributing Switchboard in main hall, with four switches for four circuits, one to each floor and one to servants, cables being connected with four distributing fuse boxes, with double-pole fuses.</p>	<p>Main Switchboard, between dynamo house and accumulators, has following: One 15 contact switch in charging circuit; one 15 contact switch in discharging circuit; one main dynamo switch, one main switch for pump circuit, one main switch for house circuit, with double-pole fuses; one ampere meter in charging circuit to read to 150 amp., one ampere meter in discharging circuit to read to 150 amp.; one voltmeter to read 150 volts. Main Cables composed of 37 wires, No. 15 S.W.G., insulated and laid in insulated troughs. Cable has R. of 600 megohms, and current density of 1,000 amp. per sq. in. Distributing Switchboard in main hall, from which four circuits run to each floor and servants' department, each connected with a distributing fuse box; each controlling a number of sub-circuits, having not more than 6—8 lamps.</p>	<p>Mr. Freese has only one circuit. His wiring is original, as in rooms the current is carried to 8 c.p. lamps by means of insulated cords supported on the ceiling by brass hooks, all within sight. In passages the wire is carried in lead tubes like a bell wire. Mr. Freese stated that this method of wiring in rooms becomes tenant's and not landlord's fixtures. He also states that 60 volts and 8 c.p. is more suitable for small installations of about 50 lamps. He states also that the cost of electric light for private houses need not cost more than £4 or £5 a lamp when the motor is steam, less when water is convenient to use turbines. Mr. Freese has the switchboard in a passage at the back of the dining room; on it he has a voltmeter and ammeter. He has several plugs about rooms for portable lamps when required.</p>

Atypical and Unusual Brain-Forms, especially in relation to Mental Status: A Study on Brain-Surface Morphology.
By W. JULIUS MICKLE, M.D., F.R.C.P. (London).

(Continued from page 483, July, 1897.)

CHAPTER XII.

I have now dealt at some length with atypical and unusual conformations of brain-surface relevantly to mental standing, by description both of the general and of the local deviations from more usual arrangement; and have described aberrant brain-forms—abnormal defects or aberrations of cerebral gyres and furrows—which may serve as a stigma of degeneracy in the stock from which the individual springs; or may arise from disturbances in the very foundations of being, due to pathological and developmental anomaly during intra-uterine or during early extra-uterine life. In the course of the preceding chapters it has been necessary to discuss so many matters, and with so much detail, concerning the brain-surface morphology, that it will now be useful to resume, on lines both broad and brief, some of the principal features of interest and importance.

In the first place, I must guard against being thought to make overmuch of deviations from the usual form of the brain-surface. Nothing is further from my mind than to belittle other enormously and often supremely important and governing anomalous states. So much of my life has been spent in the study of pathological conditions or changes in the nervous system that there is no likelihood of the belittlement of this study by me. Any imputation of the kind may be well met by citation from an address I gave in July, 1895,* in which the following relevant passages occur, and I may fitly reproduce them here. They are in a section the heading of which consists of the assertion that *their full significance must be assigned to other coexisting conditions*:—proof, was such needed, that the writer was fully alive to the rigid limitations of the purport of naked eye morphological states of the brain-surface.

The passages are as follows:—

“At the threshold we are met by the question how far we may rightly attribute any significance to these deviations of

* *British Medical Journal*, Sept. 28, 1895.

brain architecture in elucidation of the subject of mental defect and disorder. And, if we decide that they do possess a meaning in this relation, we next encounter the enquiry what, precisely, their significance is. In reference to this there are many fallacies into which we may wander, many pitfalls into which we may stray. To dwell even lightly upon these would occupy the whole time available for this address. Therefore, one must be content with bare mention of some of the most important of them, and thus at least take the precaution of guarding against misconception as to the purport, scope and implications of what will presently be stated.

“To begin with, there is a number of conditions to which due weight must be given and their full importance and significance assigned. Such, for example, are: the pathological brain changes found, both macroscopic and microscopic; the diseases of parts and organs other than the brain; disorders of blood and lymph circulation, with all their possible local and general states and effects; alteration of the blood-constitution in itself; addition to the blood of morbid deleterious materials in, of, or derived from food, drink, drugs, and pathogenic microbes; either transitory or diathetic autotoxic states of abundant multiplicity of form and origin; practical starvation of brain or, again, its perverted nutrition, however brought about; the strain and stress of life, social, affective, occupational; the physiological evolutionary and involutional crises and changes of the organism. There are also such considerations as the relative size of the brain to the whole body or to standard weight of race and age; the relative proportion of grey and white in the brain; the richness of the grey, its depth—actual as well as relative—its natural minute structure; in a word, the more important part of the finer architecture of the brain; and finally the outcomes other than those mentioned . . . of a comparative evolutionary elaboration or evolutionary simplicity of a brain, as the case may be.”

THE VARIOUS UNUSUAL AND ATYPIC BRAIN-FORMS HAVE WIDELY DIFFERENT SIGNIFICANCE.

In an early chapter, it has already been emphasised that deviations from the usual form and arrangement of brain-convolutions possess very different and sometimes even contrary significance. For gyres and furrows deviate from

the usual conformation in ways essentially distinct, independent in origin, boldly contrasting in interpretation; inasmuch as they may deviate from the ordinary average state, in the direction of superiority; or in that of aberrant irregularity; or in that of inferiority by defect or by retrogression. The first shows active development and high evolutionary grade; the second exhibits formative activity, perhaps over-lively, but lower in kind, irregular, aberrant; the third indicates defective development, or else evolutionary reversion.

Thus it is seen that superiority, irregularity, and inferiority are the three great lines of departure from the usual average and normal morphological states of gyres and furrows. Of those, the second may conveniently be conjoined with the third, as being also essentially a kind of inferiority, and therefore for the purposes of present consideration may be merged in the inferior. And thus it comes about that deviations from the usual form of gyres and furrows may be considered according as they are due to one, or other, or several of the factors now enumerated, namely:—

1. Brain-development—in general and somewhat equably—slow, weak, defective.
2. Brain-development deranged, perhaps active, but occasioning irregular and bizarre forms.
3. Brain-development more or less arrested, with some persistence of foetal character, instead of normal advance to adult form.
4. Reversion toward brain-forms of lower races of mankind.
5. Reversion toward brain configuration of lower animals, and chiefly of apes.
6. Superiority of brain-development.

The implication has just been made that inferiority of brain-development does not follow in each given case the one or the other, only, of the first five conditions a moment ago mentioned. In the majority of brains thus affected more than one of these conditions is present. For example, the very fact of the existence of a comparative arrest of development with a degree of persistence of foetal character “(3),” may lead also to some phase of reversion toward brain form of a lower race of mankind “(4),” or toward that of an ape “(5).” Again, a general slowness and defectiveness of brain-development may give rise to one of the several other

kinds of brain inferiority. And the brain form and growth and relation of parts are often profoundly modified or altered by local pathological changes occurring during foetal or infantile life, or childhood.

In the first chapter a number of new details observed by the present writer were stated in brief summary. And if we now turn to the next seven of the preceding chapters—namely those containing a description, a discussion, and an estimate, of the chief deviations from type and defects in conformation of gyres and sulci in the brains forming the basis of this series of articles—we meet, *firstly*, with a few somewhat *general* conditions, existent simultaneously in various and separate parts of the brain;—and, *secondly*, with some more definitely *local* or individualised states, affecting particular lobes, gyres or furrows. In either case, the description drawn from the numerous brains in question includes not only the deviations from usual form and relation stated by other observers; but also those brought forward by the writer. And in the following summary free use will be made of passages taken from the preceding chapters.

THE MORE GENERAL CONDITIONS OF BRAIN-SURFACE ARCHITECTURAL FORM.

Among the more general departures from usual form or type in any of the directions mentioned—superiority, irregularity, inferiority—the following may now be briefly recapitulated.

On the whole, unusual and deviating states of the cortical architecture appear more frequently in the right than in the left cerebral hemisphere, even after due allowance made for the degree of difference existing between the normal standards of right and of left cerebral hemisphere in man.

Another general condition sometimes found is a widespread irregularity of gyres and much irregular division and subdivision of them by the unusual aberrant course, length, depth, forking, or reduplication of ordinary furrows, or by the existence of unusual ones. This is dissimilar, not only on the one hand from that of a brain of inferior form marked by few and simple gyres and sulci, but also, on the other, from that of a normal highly-endowed brain rich in folds and anfractuositities.

The next to mention is the occasional formation of an islet of brain-cortex, by unusual aberrant forking of a

principal sulcus or of a fissure, the spurs fully reuniting after enclosing the islet of cortex ; as for example in the case of the interparietal sulcus or of the first temporal, or of the central fissure. Such an islet of cortex rising in the channel of a furrow, as if produced by a forking and prompt reunion of the main trunk of the furrow, is indicative of *aberrant* formative activity.

The relative size of the several lobes of the cerebrum differs considerably from the normal standard, in some cases. Similarly, the standard of relative size of the several gyres in a lobe is not infrequently departed from.

Defective brains sometimes present abnormally small and numerous convolutions.

There may be quasi-insulation of large areas of cortex by the conjunction of several different furrows, some of which may be unusually strong secondary or tertiary sulci and some may be supernumerary.

Again, unusual forms and states and relations of furrows may be produced by the irregular course and extension of known sulci. Thus, furrows may run downward and backward upon or near the temporal surface, or pass therefrom to the inferior cerebral surface and possibly extend almost to the hippocampal or calcarine fissures.

Unusual furrows may also be formed by abnormal reduplication of a well-known furrow.

Either of these conditions indicates a perversion in developmental activity; the former showing defect of annectant gyral folds, together with luxuriance of branchings and undue extension of sulci; whereas the latter, or duplication of an ordinary furrow, shows perverted formative activity, the action being excessive in degree but lower in grade.

Other unusual furrow-forms are produced by the breaking up, in a given case, of a furrow, which is ordinarily somewhat strictly rectilinear, into two disjunct fragments lying at angles to one another; or by the breaking up of a usually continuous furrow into several scattered pieces.

A furrow-girdle may sometimes be found; namely, a complete or almost complete irregular circle of furrows engirdling a large part of the cerebral hemisphere, from tip of temporal lobe back again to the same point or nearly thereto. It is formed by the confluence of a number of furrows; that is to say, the first temporal the interparietal (or not), the superior and mesial limbs of the parieto-occipital, the conjoint stem

of the last-named and of the calcarine, the lingual (or not), the collateral, and the temporal incision.

This furrow-girdle shows inferiority of development, inasmuch as it indicates a relative defect of the annectant gyres and gyrels in the course of the girdle, which, normally, should more or less interrupt and separate its constituent elements. It also shows undue extension of sulci, and unusual length of the temporal incision.

(To be continued.)

*On some points concerning the Degeneration of the Neuron.**

By F. W. MOTT, M.D. London, Pathologist to the London County Council.

Dr. Mott gave a demonstration by means of lantern slides and microscopical specimens to illustrate "*some points concerning the degeneration of the neuron.*"

He pointed out that the "neuron" must be considered as a very complex cell with processes, of which, as Golgi had maintained, *one* is the neuraxon or axis cylinder process, the others dendrons. The dendrons receive the impulse which, passing through the cell, is conveyed to the neuraxon. Every neuron is an independent protoplasmic unit, anatomically distinct, in contiguity with other neurons, but not in continuity. There is no anatomical, only physiological association. A neuron consists of two histo-chemical substances, one stainable by basic dyes, the other unstainable by such dyes; the former is termed chromatophil or basophil, a substance which, probably owing to the hardening reagents, takes on the form of granules, but very likely only represents the hyaloplasm of a cell. The achromatic substance represents the spongoplasm of a cell. The fibrillæ of the dendron and dendrites, or terminal expansion of the dendron, pass through the body of the cell, being connected with the intracellular achromatic structure, and then pass out at the pole emission into the neuraxon. He then showed a number of photographs of neurons undergoing degeneration, as evidenced by the changes in the chromatophil substance, its disappearance at the periphery of the cell, the diffuse staining of the cell, the changes in the nucleus, and in the

* Notes of a demonstration by means of lantern slides and microscopical specimens given at the Meeting of the South-Eastern Branch of the Medico-Psychological Association at Canehill, 21st April, 1897.

form of the cell, its disintegration, and the action of phagocytes upon the degenerated neuron. He showed also that cells stained by the Golgi method appeared normal, although Nissl's method had revealed in the same portions of brain very marked evidence of degenerative changes. One photograph was particularly interesting, as after the disappearance of the chromatophil substance the fibrillæ of the dendron could be distinctly traced through the cell to the neuraxon. He pointed out that if the cell underwent chemical changes, either of hydration or dehydration, which caused destruction of the continuity of these fibrillæ, it was probable regeneration was impossible. He then referred to his own experimental researches in conjunction with Dr. Hill, and compared them with the researches of Nissl, Lugaro, Marineseo, and others upon the degeneration of the neuron. These observers had obtained similar results by chronic lead and arsenic poisoning in animals, as Dr. Mott had found.

After this interesting demonstration, Dr. Mott proceeded to show by his researches the probability of the production of *toxins* by the degeneration of nervous structures, and he referred to experiments which he had been pursuing in conjunction with Dr. Halliburton—a preliminary account of which had been already published in the Proceedings of the Physiological Society. He supported the probability of auto-intoxication by the frequency with which he found degeneration of the heart and other muscles in general paralysis, a degeneration which he could not satisfactorily account for, by terminal infection from microbic influences, nor could it be explained by degeneration of the vagus, cardiac plexus, or other nerves. He therefore assumed that there was a probability that some toxin exerted its influence upon the muscle or motor end plates of the nerves. He suggested that protagon may break up into stearic acid, glycerophosphoric acid, and cholin. The latter he had shown in the paper referred to had a depressant action upon the heart, and probably was formed when nervous tissue underwent degeneration. Finally, he referred to the probability that general paralysis was a primary progressive degeneration of the neuron (taken collectively) affecting especially the neurons of association which form the great bulk of the brain, but starting sometimes in the afferent or efferent projection systems, and these being respectively of the ataxic or lateral sclerosis type. He was not

of opinion that general paralysis should be considered as a primary meningo-encephalitis. It was a primary progressive degeneration of the neuron, *with secondary inflammatory reaction* due to the irritation of the products of degeneration! He thought that this of itself would give rise to congestive stasis, anæmia, increased irritability of the neurons of the cortex and epileptiform discharge, hence the seizures; but with each seizure a fresh set of neurons would undergo degeneration, and thus a *vicious circle* is established which must of necessity lead to progressive destruction of the nervous system, and cumulative effects in the way of complications. The influence of *Syphilis* in the production of progressive paralysis of the insane received its most convincing support from those cases of juvenile general paralysis, the subjects of which have been found to be affected by congenital syphilis. He showed photographs of two very remarkable cases in young males, both with Hutchinson's teeth and other characteristic symptoms. These patients had died of typical general paralysis. He considered that syphilis by its toxic influence produced premature decay of the "neurons." Any other toxin, that remained in the system as long as syphilis, might do the same.

General paralysis, like locomotor ataxy, was not a syphilitic lesion *per se*, but syphilis was the most potent factor in the production of these diseases, because of its prevalence—because of its long duration in the system. Most of the details of this work will be published shortly in the Archives of the Pathological Laboratory of the London County Council.

Discussion.

Dr. HYSLOP—I am sure, Sir, we have all listened with very great interest to Dr. Mott's paper on the degeneration of the nerve cell. In particular with regard to the disposition of the so-called chromatine granules: I must say that, having studied them for some considerable time by the Nissl method of preparation, one has come to the same conclusion, that they cannot be really granules, nor even rods, but some intracellular substance, which, owing to the method of preparation, becomes differentiated. It appears to me to be a very important advance in the subject, and if we can succeed in getting much thinner specimens I think that in time we shall be able to learn more about the actual degeneration of the nerve cell, and also be able to follow out what really constitutes degeneration and regeneration. Whether Dr. Mott is perfectly correct in saying that the breaking up of the stroma of the intracellular substance is the point at which a cell's death occurs, is a matter upon which one cannot offer an opinion. There is one question I should like to ask Dr. Mott. Does he negative the conclusions of Andriezen, and Berkeley of Baltimore, with regard to the role of the lateral gemmules? I mean the bead-like processes on the apical processes of the nerve cells, especially of the dendrons. I should like to know from Dr. Mott if he has

performed any control experiments, and, if so, whether he has been enabled to verify the absence of the lateral gemmules in disease structures and the presence of the corresponding beading or swelling of the nerve structure? I rather gathered from what he said that he objected to the conclusions of those authors, or, at any rate, that he did not consider them satisfactory.

MR. KESTVEN—I should like to ask Dr. Mott whether the degeneration which he has so graphically described this afternoon in any way explains the alterations I have seen in nerve cells. Take, for instance, in pseudo-muscular hypertrophy of the spinal cord: I have seen unstained sections in which the nerve cells were strongly pigmented. Does the degeneration described by Dr. Mott in any way explain this pigmentation of the nerve cells?

DR. SHUTTLEWORTH—Mr. President, I rise to mention a very small matter which came in at the end of the highly interesting paper, with regard to the relation of inherited syphilis to general paralysis. In my experience at the Lancaster Asylum I think I saw about six such cases, which I diagnosed in my ignorance as cases of juvenile dementia. That is to say, they went on to a certain extent to improve at school, some of them reached the fourth standard perhaps, and then at the age of 12 or 13, or thereabouts, breaking down and sometimes suffering from what the friends called "fits." At any rate, we had them describing symptoms of fits; sometimes it was sunstroke. There was some seizure which the child had not had previously. Things went from bad to worse from that time until the child certainly developed symptoms similar to those of general paralysis of the insane, under which designation Dr. Clouston some years ago designated similar cases. Although at first the syphilitic history was not at hand, and it is not always that there is such decided evidence as in the cases just depicted on the screen, yet in certainly four out of the six cases I have alluded to there was discovered a history of syphilis, and in one or two there were decided stigmata of inherited syphilis. Unfortunately, I am not able to contribute to the pathological aspect of the subject, inasmuch as the patients did not all die while I was resident at Lancaster, and in the one case that did die *post mortem* was refused.

DR. MERCIER—We are much indebted to Dr. Mott for the most interesting demonstration he has given us. It is not often that we have the opportunity to see the results of the elaborate work which is being carried on in the laboratories of the learned in these departments. I am particularly struck with certain of the remarks that Dr. Mott has made with respect to the present position of opinion regarding the neuron. I have no reason to speak with great respect of the nerve cell, for I remember there was a time in my younger days when I spoke of it in a manner which was looked upon as blasphemous by the authorities of that day. The nerve cell a little while ago was not only deposed from its position of supremacy, but it was relegated to the position of a mere servant—a mere hewer and drawer of water—to the neuron itself, at any rate to the active part of the nervous tissue. I am glad to find from Dr. Mott that this deposition has only been temporary, and that now the nerve cell, although it does not occupy that high position of supremacy it ought to occupy, has at any rate somewhat been reinstated, that it is now looked upon as really a reservoir of force, and has a position as the place in which the currents of force are reinforced and re-invigorated as they pass from the dendron into the axon. Into the more elaborate theories as to what the meaning of these visible changes in the cells really may be it is scarcely possible to enter on so short consideration. The whole of this microscopic observation is based upon the reactions of dead organic matter to staining fluids, and we have to bear in mind that, in the first place, these organic materials are dead, and that, in the second place, their constitution has been altered by preservative fluids. Those are two considerations which are doubtless borne in mind by those who observe them, but they are considerations which I think should lead us to accept with very great caution any positive conclusions that are drawn with regard to the

strong distinctions of structure corresponding with strong distinctions in staining. No doubt, as Dr. Mott says, the staining is a very delicate chemical test, but we must remember that the conditions under which we see these appearances—under the microscope—are not the conditions in which they exist during life. I think if we constantly bear this in mind that we shall be less apt to come to very definite conclusions, as, for instance, that the nucleus of the cell is the seat of psychical processes, than if we jump too readily to the conclusion that what we see is actually what exists.

The PRESIDENT—I do not remember whether Dr. Mott exactly defined what he means by the word "neuron." It seems to me that the last two speakers have a different conception as to the meaning of that term, so that perhaps it will conduce to the advantage of the discussion if we know just what leads to that difference. There are several points in Dr. Mott's address well worthy of discussion, but he did not dwell long enough upon any one of them really to state fully what his view was upon each particular point. The nature of the demonstration was such that this was impossible, and it was with panoramic rapidity that he brought the various matter before us. His remarks about the different sets of neurons and their relation to the nutrition of different parts are of extreme interest, particularly in relation to the practical question, on which he also lightly touched for the moment, of the different kinds of spinal disease in general paralysis of the insane. Of course, we have in general paralysis of the insane quite different spinal lesions in different cases, and in one set of cases which he mentioned the neurons of the posterior spinal root ganglia, are, I suppose we may say, the fountain and origin of the spinal mischief. However, as you know, in some cases of general paralysis, those particular centres seem to be spared, and the cells which are concerned in the nutrition of a certain portion of the lateral columns particularly suffer. Of course, we have all kinds of mixed cases of general paralysis, but we can select two groups out from among the spinal cases in general paralysis. The matter that he brought before us last—that of congenital syphilis, which eventually turned out to be cases of juvenile general paralysis—of course, is of great pathological interest in relation to the question of the causation of general paralysis, and as far as those cases and similar ones go, they constitute strong points in favour of investigators who argue that general paralysis is very much a syphilitic disease. However, Dr. Mott has not entered into that subject to-day, and that is not the subject for debate. I did not quite catch all he said, but I gathered from him that from the material produced by the breaking up of certain parts of the nervous system by experiment, morbid toxic substances had been obtained, with which he had carried out certain experiments. Therefore, his contribution this afternoon is in one sense a contribution to the enormous subject that is at the present moment being so widely studied—namely, the production of disease by what has been very aptly termed auto-toxis. That at the present time is a subject which leads perhaps to a great many opinions being expressed which are altogether premature, and jumping at conclusions upon that subject from the various experimental proceedings connected with it, as, for example, the uro-toxic co-efficiency:—The standard of uro-toxicity, the standard of the amount of poisoning influence and power in a certain amount of urine obtained from animals in various forms of experiment, which are again used to inject into other animals to produce disease, and in many cases death. Well, the conclusions that have been formed on this subject are of the most conflicting nature. No two experimenters seem to have arrived at the same result, and therefore we will welcome any contribution, and do welcome the contribution we have had this afternoon from one who is so careful and capable an investigator as Dr. Mott. It is high time that something definite and distinct should be proved on this subject. However, that was not quite the subject that he brought before us, but what he did bring before us was the subject of a presumption of auto-toxis occurring in many forms of disease and giving rise to many symptoms, as shown by the

substances which he mentioned. When we have familiar diseases, such even as epilepsy and many other affections of the nervous system, at the present time being attributed simply to forms of auto-intoxication—and the subject is an immense one of which little is known now, but we hope in the future to learn very much—that I think constitutes one of the most important features of Dr. Mott's demonstration. It is intensely interesting to hear these results, and the whole subject is one which has been pretty well worked at in this country, but it is one which has a great future before it. There is no doubt that an immense number of diseases that have been attributed to other things are simply due to a certain intoxication by recurring constitutional principles, and at all events favoured by certain circumstances and perhaps as much inherited as the colour of the hair and the nature of the various functions of the body by the unfortunate individuals who are subject to them. How far in the future the views that are now held will have to be curtailed on that matter is a thing to be worked out, and I look upon Dr. Mott's contribution as helping to that end.

Dr. MOTT—In reply to Dr. Hyslop, I have to say that I do not wish to negative the result of the authors he mentioned particularly. All I desire to point out is that I and other people working on this subject do not consider that the chrome silver method lends itself to pathological investigation to the same extent that it does to anatomical. If the process is successful, it will only stain one in fifty cells, and if it stains every cell you can see absolutely nothing distinctly. Dr. Hill, of Cambridge, in his presidential address to the Neurological Society, referred to the uncertainty of the method. I think the method would show late changes, but not early. With regard to Dr. Hyslop's remark about the basophile substance, I certainly think it will be shown that a neuron is simply a complex cell, which consists of spongioplasm and hyaloplasm. The spongioplasm is the intracellular network, which is continuous with the fibrillæ of the dendrons and axon. The chromatophil substance is very probably hyaloplasm coagulated by the alcohol or corrosive sublimate solution, and the granular character is possibly due to the arrangement of the intracellular meshwork in which the substance lies. Dr. Shuttleworth was good enough to refer to six cases of juvenile general paralysis in syphilitic children. I think these are very important, because there are frequent fallacies in showing the relation of syphilis to the production of general paralysis. In a boy of 15, one of the cases which I referred to, we can eliminate other possible factors, *e.g.* alcoholic or sexual excesses, to which general paralysis is often attributed. Dr. Kesteven remarked upon the fact of pigmentation occurring in pseudo-hypertrophic paralysis. I think pigmentation is rather a question of age. I have made a series of investigations, and I thought I had discovered something once. I was staining with the Marchi method, and I found a quantity of this pigment in the cells stained very black, and it occurred to me that this was probably a form of degeneration. I examined a great number of spinal cords, and I found every person over 20 showed this pigmentation more or less. In only one of a large number of monkeys did I find this pigmentation, and that was a very old monkey. Those that we generally get in this country are baby monkeys, and there is no trace of pigmentation in them. I do not think the pigmentation itself is of importance. Of course, if the cell is shrunken or swollen up, then that is a sign of degeneration which you can easily see without any special staining. As this pigmentation occurred in young subjects in Dr. Kesteven's cases, it is of interest and might possibly be pathological. I have to thank Dr. Mercier for his remarks, and with regard to the definition of the neuron, I should like to repeat that I consider the neuron is an independent protoplasmic unit, a nervous independent cellular body, with processes. If you take the development of the neuron, it is simply first of all a round cell like any other cell; then in the middle of it the nucleus becomes very pronounced, a process grows out from either side, one forming the dendron and the other the axon, which ends in

a terminal arborisation. Golgi showed that you may have many dendrons, but only one axon. He looked upon the dendrons as possessing only nutritive functions. Cajal and most observers consider they receive and transmit the stimulus through the body of the cell to the axon, which is continued onwards as the axis cylinder of a nerve. Schafer in *Quain's Anatomy* has applied the term "neuron" to the axis cylinder process, and this has given rise to a tremendous amount of confusion, because people think one is referring to the axis cylinder process. I refer to the whole nerve cell and its processes. So much work has been done on the Continent, that we shall probably have to adopt the Continental term "neuron" for the nerve cell and all its processes. With regard to the remarks of the President, I have to thank him very much for kindly referring to my paper in the way he has done. I only wish I had had more time to speak about some of the matters in detail, but I thought possibly it would be more interesting and more suggestive if I brought forward a brief sketch of the work which I have done during the last eighteen months. The question of proof of intoxication by these products, I think, is perfectly open to doubt at present. All I say is that there is reason to believe that very possibly substances are produced by the degeneration of the nervous system of the nature of cholin, which, escaping into the blood, may act as toxic agents upon the heart and other muscular structure. Neurine is a poison which is more dangerous than cholin, and both these bodies are closely allied to muscarin. With regard to the uro-toxicity, the work by Bouchard requires further confirmation. A good many of the experiments are, however, very interesting, important, and suggestive. I think there is a possibility that in general paralysis and stuporose melancholia the urine does contain toxic products, and what I am doing at present is to endeavour to separate the toxic products by similar methods to those employed in separating the toxin produced from the cerebro-spinal fluid.

**An Exact Method of Recording Deformities of the Hard Palate.*
By EDWIN GOODALL, Joint Counties Asylum, Carmarthen.

Being engaged, in the course of anthropometrical observations, upon an examination of the hard palate amongst the inmates of an asylum, I have endeavoured to make out a suitable method for the purpose. The proper basis of all such study, I believe, must be cast-taking. Seeing that the procedure to which I am about to refer is only rendered possible by the preparation of a cast of the hard palate, any value which may attach thereto is secondary in importance to the cast-taking. Dr. Eugene S. Talbot, the distinguished American writer upon deformities of the skull and jaws, has devised instruments for measuring the palate, either in the living subject or in casts. For the following method no special instruments are needed; and this may be accounted an advantage. Dr. John R. Lord, clinical assistant at the Joint Counties Asylum, Carmarthen, has been associated with me in working out the details of this method, and I am indebted to him for valuable assistance in cast-taking.

* Read at the May Meeting of the Medico-Psychological Association.

The method is as follows:—Having obtained a plaster model of the hard palate and upper teeth, after the usual dental method, a mixture of printers' compo (five parts), Keen's cement (one part), zinc oxide (one part), water (one part) is poured into the model up to the inner edge of what corresponds to the alveolar process of the jaw; the gap posteriorly being previously stopped up by a strip of gum-paper. This blend of materials is prepared by mixing the three last mentioned constituents into a paste, melting the compo and adding the former to the latter and stirring. In about three to four hours the substance sets. In practice it is better to leave over night. It is then cut across transversely and at right angles to the alveolar plane, through a line joining the extreme posterior edge of the second molar teeth. The portion behind the line of section is not utilised, but can be re-melted for another cast. The compo-cast is now removed from the model by gradual eversion from behind forwards. There are two or three other points to be noted. The plaster-model is oiled before the compo blend is poured in, and if while the compo-cast is still soft some Keen's cement is sprinkled on the surface, the alveolar edge of the compo-cast is thereby rendered firmer. The mass is dipped in soluble glass, which sets upon it, giving additional firmness. The upper surface of the white rubber-like mass (Fig. III.) shows the various markings of the mucous membrane covering the hard palate; the under surface is a smooth plane, the boundary of which is the alveolar curve of the hard palate. The composition of the compo-cast is the best furnished by trial up to the present. No doubt further trial and experiment will lead to improvement. I was led to the use of printers' compo by favourable experience of it when preparing models of the brain. The other ingredients lend additional firmness and produce a white tint more suitable for working with than the original yellow brown of the compo. Further, the melted mass so composed is easier to pour than that furnished by compo alone. The compo-cast is now placed the flat surface downwards upon a piece of millimeter paper suitably fixed; the posterior edge of the cast corresponding with one of the deeper lines denoting centimetres. The outline of the alveolar surface (Fig. I., A.B'.A') is then carefully traced upon the millimeter paper in (say) dashes or red. For practical purposes, if a large quantity are to be measured, all the tracings can be made with an ordinary pencil, well pointed. For descriptive and demonstrative



FIG. II.—An instrument designed for making the compo-casts and for ascertaining the highest point.

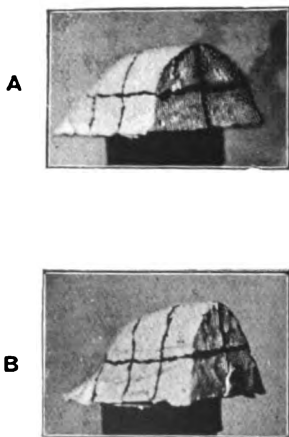


FIG. III.—Two compo-casts.

(a) Fairly normal.

(b) Abnormal. The diagram of this cast is shown as FIG. I.

purposes variously dotted lines or coloured ink pencils are used. One next reads off the length of the base line (Fig. I., AA) in millimeters, bisects this, and draws in an antero-posterior diameter (Fig. I., B'.B'') upon the diagram, at right angles to the base line, from the medium point of the latter. The existing transverse centimeter rulings are then inked over and give three or four transverse diameters (Fig. I., F.E', etc.)—in accordance with the size of the alveolar surface. The dimensions of the alveolar plane of the cast (or palate), in all directions, can be easily read off on the millimeter paper. In practice I note: greatest length—breadth at (4) transverse diameters (including greatest breadth)—symmetry—outline. The cast is now placed upright on its posterior surface along the same base line, and the outline of this surface is then traced in (say) in crosses or green (Fig. I., A.B.A'). The antero-posterior diameter of the alveolar surface is continued backwards over the posterior surface, and at the mid point of the line so drawn a transverse one is traced (Fig. I., C.C'), dividing the posterior surface into upper and lower halves. The dimensions of the posterior surface can now be ascertained in any direction, and its shape is recorded. In practice I note of this surface: greatest height—symmetry—outline.

Turning next to the palatal or upper surface of the compo-cast, we have to make observations upon the shape and to map out certain curves. For this purpose the use of a simple instrument on the lines of that figured in Fig. II. is necessary. Three or four lateral curves in the same planes as the transverse diameters of the alveolar surface are dotted in on the compo-cast by pressing gently with the needle of the sliding indicator, the corresponding transverse diameter being moved laterally along a base line of the millimeter paper affixed to the stand of the instrument (see Fig. II.). These curves are then taken off with fine lead strips, also the antero-posterior curve; these strips are applied to the millimeter paper and the curves traced thereon (Fig. I., E.E', etc.). The most anterior of the lateral curves is best got by cutting through the compo at that line, applying the cast to the mm. paper, and tracing the curve directly. The antero-posterior curve (Fig. I., B.A'') is drawn laterally so as to economise space.

To ensure perfect accuracy the tracing can be first done with some sharp instrument and then deepened or tinted with a pencil. Next to be noted is the greatest height of

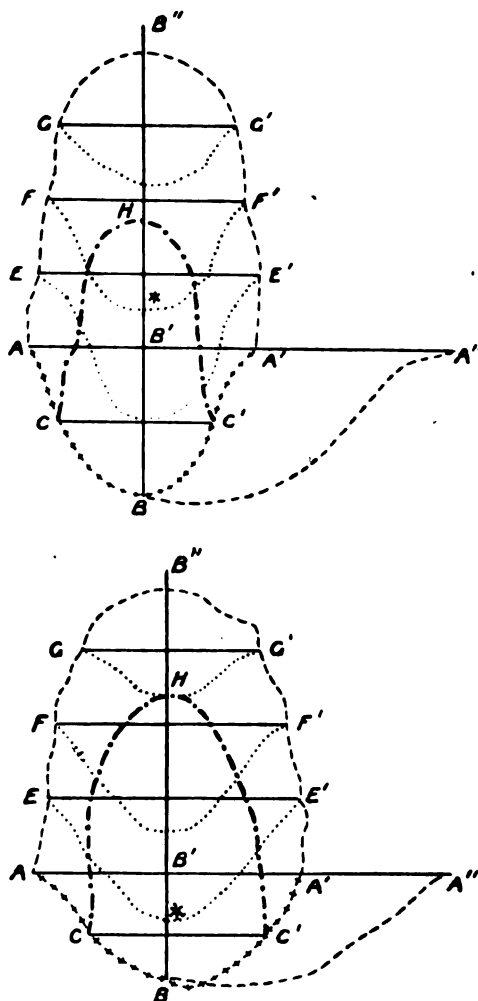


FIG. 1.—Diagrams of two compo casts on mm. paper. A. Fairly normal; B. Abnormal, contracted, high arched.

The curve A.B''.A' is the alveolar arch; B.A'' is the antero-posterior curve; C.H.C' is the mid-horizontal plane; the curve, A.B.A' and base line A.A' contain the posterior surface; A.A' is the base line; E.E', F.F', G.G', are transverse diameters of the alveolar surface upon which stand in dotted lines the lateral curves of the palatal surface; B.B' is the antero-posterior diameter of the alveolar surface; + marks the highest point.

the compo-cast, it being the greatest height of the palate. This is found by using the instrument similarly to when a man's height is being taken. The compo-cast is placed alveolar surface down on the stand of the instrument, the indicator is brought down to its highest point. This is read off on the index, marked on the compo-cast, and thence transferred to the millimeter paper. In Fig. I. the highest point is marked + and is 1 mm. to the right of the ant.-posterior curve or diameter, and the 1 mm. is in front of the second transverse curve. Of the upper or palatal surface in practice one notes: antero-posterior curve—lateral curves, observations *re* shape. Of vertical measurements one notes: absolute greatest height—greatest height of lateral curves (this appears on the mm. paper). Information regarding what I term the mid-horizontal plane remains to be obtained. To have this, in addition to the description of the alveolar plane, seems to me desirable, because one has then a more accurate knowledge of the conformation of the palate and of any deviation from the normal. This is dotted out on the compo-cast in a similar way to the lateral curves, the level being the mid-line of the posterior surface. To convey this to the millimeter paper a section is taken with a razor or long blade at the level of this dotted line; the upper portion is placed on the millimeter paper with its base on the transverse diameter (Fig. I., C.C') of the posterior surface and its outline traced in. Of the mid-horizontal plane (Fig. I., C.H.C') in practice I note: greatest length—breadth at transverse diameters (including greatest breadth)—symmetry—outline. The length-breadth index of the palate can be obtained by multiplying the greatest breadth of the alveolar surface by 100 and dividing by the greatest length of the same surface.

Lastly, to obtain the volume of the cast (the capacity of the palate vault) ascertain how many ccm. of water the cast displaces (in a cylindrical measure). This is best done before the cast is cut through.

The whole of the information in the table appended (except the volume) is conveyed by the millimeter paper. Naturally, edentulous jaws are unsuited for this method except in rare instances. But the method can be used even where many teeth are lost if some front teeth and a second molar are left; and in a great number of cases we get a good deal more than this to go upon. In case of loss of many teeth with shrinkage of the gums, I proceed as follows. I soften some dental modelling wax and stretch it along the outside of the alveolar

edge where the teeth are missing. I then mark on this wax an artificial alveolar level, taking it from the alveolar margin where the teeth are existent. Having thus obtained an alveolar margin the rest of the process is as already described.

The advantages of this method may be stated thus: thoroughness; the dimensions of the palatal vault can be ascertained in great detail and at any part of the vault if desired. Comparative simplicity; no elaborate instruments. Cheapness of materials, in themselves; added to which the composition can be remelted and used several times over. Convenience of the record. Permanence of the record. Lastly, the compo-cast gives a positive representation of the palate vault, more striking, perhaps, than a plaster mould for demonstration.

A method such as the above would no doubt only be used for the purposes of a special investigation or in individual cases; it is too detailed to be practicable for the purposes of routine general anthropometrical examination. About half-an-hour is required to carry it out. However, wherever a plaster cast of the palate is taken, the taking of a compo-cast involves but little additional work, and the number of measurements can be curtailed if desired. For special anthropometrical examinations of particular parts we require detailed methods. I may recall, by way of instance, Rieger's method of craniography; the cephalometric formulæ of Benedikt; Schwalbe's chart for the examination of the ear. In all these the examination is conducted in greater detail than is possible in a general anthropometrical description; a criticism which, as already stated, may also be applied to the method described in this paper.

TABLE OF SCHEME FOR OBSERVATIONS ON COMPO-CAST.

Under Surface.—[Alveolar Plane]—Greatest Length—Breadth at (3 or 4) Transverse Diameters (including Greatest Breadth)—Symmetry—Outline.

Posterior Surface.—Greatest Height—Symmetry—Outline.

Upper Surface.—[Palatal]—Antero - Posterior Curves—Lateral Curves—Observations *re* Shape.

Vertical Measurements.—Absolute Greatest Height—Greatest Height of Lateral Curves.

Mid-Horizontal Plane.—Greatest Length—Breadth at (3) Transverse Diameters (including Greatest Breadth)—Symmetry—Outline.

Length-Breadth Index.

Volume,

Discussion.

Dr. SHUTLEWORTH—The matter is really one that cannot be criticised except to say that the method that Dr. Goodall has demonstrated to us seems to promise very accurate results with regard to the measurement of the palate; and I think I may say that it is probably owing to the lack of mathematical accuracy in the measurement that we find so many different opinions as to its signification. Some years ago one had the comfortable thought and assurance that if a child had a high palate it was a sign of the congenital character of the defect of mind. Nowadays I believe the investigations by Dr. Channing have rather tended to upset that conclusion; and then again those of Dr. Clouston have given another aspect to the case—namely, that such leformity indicates a neurotic family history, and nothing more.

The PRESIDENT—It is extremely necessary in matters of this kind that we should have accuracy, and the plaster cast, which Dr. Goodall has shown us, seems to be the best method that has yet been supplied for our use. Some recent investigators have attempted to throw cold water upon any significance being attached to the palate, and they practically tell us that we can gain no knowledge about the patient by means of the palate. I do not believe that, for I have seen the inside of so many palates that I am inclined to fully accept the general view that a great deal is to be learnt in that way. The palate is a valuable indication, and certain conditions of it really amount to one of stigmata of certain general conditions, which are associated with many forms of disease, and which are most interesting to us in our particular practice. Although the exact value of the form of the palate may not now be appraised, yet it has a significance, and those I believe are nearer the truth who attach to it a general significance. Take, for example, a thousand patients who have deformities of the palate and contrast them with a thousand patients who have not, other things in every possible respect being equal, you will find that totally different conditions exist as regards family history, mental tendencies, and in many cases as regards morbid mental conditions, in the two sets of cases. That there is a general truth in it I am absolutely convinced.

*Abstract of a Demonstration on the uses of Formol in the Neurological Laboratory.** By Dr. A. W. CAMPBELL, Pathologist of the County Asylum, Rainhill.

Dr. A. W. Campbell, by way of illustrating the uses of formol, gave a microscopic demonstration of a series of specimens, normal and pathological, taken from various parts of the nervous system, and therewith proved that in formol-hardened portions of nervous tissue it was possible to satisfactorily stain all the constituent elements of those tissues and likewise to clearly demonstrate almost all the pathological changes in them which are to be revealed by other previously discovered methods.

In the first place the following original method for the display of medullated nerve fibres to be used as a substitute for the method of Weigert and allied processes was described.

* Delivered to the Newcastle Meeting of the Medico-Psychological Association, 1897.

1. The portion of spinal cord or peripheral nerve, or whatever it may be that is to be examined, is taken out of the formol solution and without further preparation embedded in a few drops of gum on the disc of a freezing microtome and straightway frozen and cut.

2. The sections obtained are placed in a watch glass containing a small quantity of a one-half per cent. watery solution of osmic acid and therein gently heated for a minute or two over a spirit lamp until they assume a dark brown colour.

3. After thorough washing (10 to 15 minutes) in water, the sections are transferred to a solution of hæmatoxylin similar to but rather stronger than that recommended by Schäfer in his method. It is made up as follows: Hæmatoxylin (crystals), 5 decigrammes; strong acetic acid, 4 c.c.; distilled water, 200 c.c. In this solution the sections are again gently warmed over a spirit lamp until they become quite black.

4. Again thoroughly wash in water and complete the process by differentiating according to the method of Pal, i.e., by placing the sections for a few seconds in a .25 per cent. solution of permanganate of potash and then decolourising in a solution of sulphurous acid made by mixing crystals of oxalic acid and sulphite of soda in water.

5. Again wash, dehydrate, clarify in xylol and mount in balsam in xylol.

By this method the investing medullated sheath and likewise the axis cylinder of the large nerve fibres are stained black, the delicate myelinic plexuses in nuclear structures such as the cornua of the spinal cord are clearly brought out, and also non-medullated nerve fibres in sympathetic ganglia are plainly demonstrated. The process is peculiarly well adapted for the microscopic examination of the spinal cord and shows patches of sclerosis in a very striking manner, and as the contrast between white and grey substance is pronounced it is admirably adapted for photo-micrography. Furthermore since formol fixes tissue in a remarkably short space of time, and the method itself is a rapid one, sections of a spinal cord for instance may be prepared and ready a few days after the autopsy, which constitutes a marked advance on any other method devised for this purpose.

For the display of the basophilic particles in nerve cells formol may be substituted for alcohol as a fixative and the methylene blue process of Nissl or any modification of that method satisfactorily employed, but a deplorable disadvantage

attached to the process is that the sections must be examined soon after preparation as they fade and lose much of their brilliancy in the course of a few weeks.

Specimens were also shown proving that in formol-hardened tissues the nerve cells could be impregnated with metallic combinations after the manner of Golgi. In these specimens the "thorns" on the dendrites and also the neuroglial elements were clearly defined, but as the method is not completely elaborated its description is withheld.

For demonstrating acute parenchymatous degeneration in the medullated nerve fibre it was pointed out that the method of Rossolimo and Busch (*Neurologisches Centralblatt*, Nov. 15, 1896) could be employed as a substitute for the method of Marchi.

Then for the coloration of glial and connective tissue elements Mallory's hæmatoxylin diluted with water will be found useful, and it was mentioned in this connection that according to Dr. W. Ford Robertson the method of Weigert for staining glial elements and Dr. Robertson's method for the same purpose could be carried out in formol-hardened tissues.

In conclusion the advantages of formol over alcohol as a preservative for museum preparations were briefly alluded to, and it was stated that for general employment in the museum or laboratory a three per cent. watery solution of Schering's formalin had been found of convenient strength.

Addendum.—The following method recommended by Melnikow-Raswedenkow (*Ziegler's Beiträge*) for the preservation of the natural colour of organs has been successfully tried.

1. Place the fresh organ for 36 hours in sodium nitrate, 3; potassium chlorate, 0.5; formic aldehyde, 10; water, 100 parts.

2. Transfer to alcohol 80 to 90 per cent. for six or eight hours; in this the original colour returns and the organ is taken out and preserved in water, 100 parts; glycerine, 60 parts; potassium acetate, 30 parts. If the latter solution become dirty it should be renewed.

Demonstration on the course of the pyramidal or motor system of fibres.—Dr. A. W. Campbell gave a résumé of the more recent observations of workers on the pyramidal tract and illustrated his remarks with a long series of lantern slides.

On Cases of Melancholia in Hospitals for the Insane. By a Privileged Ex-Patient.

That grave difficulties will always exist in the treatment of cases of melancholia in lunatic hospitals is evident to anyone who has lived in such places and considered the matter. The mere congregation of so many distressed beings of different types under one roof is a disadvantage, as patients have to hear and bear numberless griefs in addition to their own, and many painful delusions are suggested to them which might never have entered their own minds.

The majority of melancholics feel this acutely, and experience great difficulty in throwing off their mental troubles in consequence of the many depressing circumstances and incidents which surround them. The locked doors which prevail so much even up to the present time are the cause of many torturing ideas, as they always suggest prisons and crimes; the scenes also which are apt to occur when nurses try to feed patients are alarming to and exercise a bad influence on those who have never seen or imagined anything of the kind before. Again, the tendency of matrons and nurses to treat complaints regarding bodily ailments as if they were delusions is a pity and prevents these officials not only from gaining insight into insane human nature but checks the confidence the patients would otherwise repose in them.

The reluctance often shown to listen to the distressing narratives of patients also does infinite harm. Many melancholics feel the need of moving freely about and of examining objects they are afraid of in order to correct their false impressions; and those who have ideas of impending dangers also experience the necessity of going out of the ward they may be living in to satisfy themselves as to the presence or safety of persons in other parts of the house. This overpowering desire is often little understood, and divers opinions are evidently held on the subject even yet by eminent doctors. Perhaps if these learned men had ever been mentally ill they would have found that the more they were cribbed and straitened, and shut up, the worse they felt. After their recovery, however, they might have been thankful to remain in the quiet of their rooms for a week at least to get over the feeling of exhaustion that in some cases follows severe attacks of melancholia.

Patients in reduced circumstances generally suffer most in

lunatic hospitals and will likely continue to do so, though much consideration is often shown them by doctors. How these persons can be suitably treated otherwise than by sending them to such places is apparently a puzzle at present, and its solution will be hailed with pleasure by all interested in the insane. Possibly if the guardians of some afflicted patients could be content to take low rented rooms in cottages in the country within reach of medical advice and remain with them until their recovery, keeping them a great deal in the open air and giving them simple food, satisfactory cures might be obtained and much suffering avoided, particularly as they would have quietness during the night, which would allow them to sleep more than is ever possible in the main buildings of hospitals.

In delusional cases of melancholia it is to the Superintendent that the patients look chiefly for protection and help. Such cases require to be taken aside out of hearing of the nurses and other patients and got to express their ideas fully, for few patients care to speak of their private concerns in public. The want of an opportunity for confiding in some authoritative person used to be a serious hindrance to delusions being got rid of.

That a knowledge, of the leading delusions their charges are suffering from, is necessary in all who have to do with the insane is apparent to those who have lived among patients and carefully observed them; for these delusions are the mainspring of their words and actions, and until they are mastered proper treatment, one would think, cannot be applied. Patients may have needlessly long mental illnesses which try the patience of all who have to do with them, and react harmfully on their fellow-patients if such points are neglected. The increased number of assistant physicians now to be found in some lunatic hospitals must be a clear gain to mental sufferers, allowing cases to be more carefully studied, and thus making more individual treatment practicable. If doctors would always be so good-natured and painstaking as to allow themselves to be taken into the confidence of melancholics when at the worst stages of the mental illness they would relieve many fears, hasten recovery, and often gain lasting gratitude. Melancholics generally suffer most during the night, and when a round of the wards is made by a doctor and matron or nurse it gives a feeling that they are being looked after and protected, and a few reassuring words are a great comfort at that time.

Plenty of room and space to move in and a certain serenity of atmosphere are of the utmost importance for aiding recovery. This is one of the strongest arguments in favour of detached additions to lunatic hospitals. It seems to me that mania and hysteria (not melancholia) are the diseases best suited for treatment in ordinary hospitals, as the buildings are more adapted for such cases, and as subordinate officials and nurses appear to understand the management of such cases.

Much that I observed and experienced among insane patients during convalescence and after recovery leads to the belief that so far as their illness will allow and circumstances will permit it is best to let them lead the kind of life they have been accustomed to, and the detached villas and other improvements now becoming common make this easier than formerly. A better social classification independent of any other consideration should be studied as among females especially. Cases recover and do better when beside others of their own social class.

Finally on this subject of treatment, it is always a benefit to patients if those in their immediate charge can be kept in good humour.

The spread of education will probably materially affect the type of nurse and thus the aspect of life in lunatic hospitals, and better the condition of cases of melancholia, for a more intelligent and thoughtful grasp of mental diseases, a keener imagination to develop sympathy from and a better command of resources for amusing and interesting patients should result from it.

It is probable that nurses will still have many difficulties to contend with, partly owing to the comparative incapacity of their predecessors, and partly to the overcrowding of lunatic hospitals, which is a serious bar to progress and which still continues in spite of protests from authorities on the subject.

Taking things as they are, however, the writer may perhaps be allowed to mention a few little matters which if carried out might possibly help to prevent needless suffering. In all large lunatic hospitals there are generally entertainment halls and in small ones drawing rooms, and these are usually reserved for evening parties, lectures, concerts, and for lady superintendents, lady probationers, and nurses practising music and singing; but as there are many hours each day when they are not required for these laudable purposes it

might sometimes relieve the pressure in the wards and be an agreeable change for patients if, on rainy days, they could have games and active exercise in them. This would be a relief to nurses also, particularly in the early hours of the day when corridors are switched, and much friction would be avoided. Most youthful-minded persons, irrespective of age, enjoy a romp or at any rate freedom of movement when convalescent; in the outside world they get it in various ways, and in lunatic hospitals entertainment or recreation halls give more space for it and are more suitable for the purpose than the wards. In suitable halls, which every asylum should possess, various games might be indulged in—battledore and shuttlecock, tennis, or in drawing-rooms carpet bowls, substituting hollow india-rubber balls of blue and other agreeable colours for the heavier kind in general use.

For quiet melancholics something a little more rousing than knitting and white seam should be thought of, as these occupations, though perhaps suitable enough for some patients, are too mechanical and monotonous for the former, unless reading aloud is going on at the same time, and that will not yet be attainable in all lunatic hospitals, though many efforts are evidently being made to introduce it. The copying or invention of new designs in such materials as crochet-cotton wool, wood, coloured paper and other materials might be used with much benefit, as it engrosses interest and attention. Quickly made articles would likely answer best for this purpose, and give most pleasure to the makers.

Intellectual women as a rule do not take kindly to fancy work, and something plainer and more practical sometimes suits them better, and it will be found that light mental work such as selecting and copying out passages from prose and poetry, sketching or painting, may meet their requirements better. Light household work, though a most desirable variety for women when done in moderation, requires careful supervision and is best not attempted unless distinct orders are issued on the subject mentioning which patients are to be allowed to do it and for how long each day. As for outdoor work and amusement, the care of rock gardens, the cultivation of plants, and the acquirement of specimens to add to the collection might be more attractive and amusing to some patients not otherwise interested in the subject than the usual style of asylum gardening. To have a few flowers to give away of their own growing is a pleasure

to many patients, and it sometimes answers very well to let them have small patches of ground of their own and a few flower seeds to sow in spring.

Where space permits, golf for ladies forms a pleasant variety from tennis and croquet, and suits many patients who are not able for the rapid and continuous movements required by the former game.

Brasswork might perhaps be tried with advantage as an indoor occupation, and modelling, as in some American Lunatic Hospitals; but competent teachers would be required for these and suitable work-rooms. That every patient except those hopelessly paralysed or demented can be got to do something and can become deeply interested in that something, if only time and trouble enough are taken with them, is a belief the writer holds after many little experiments with patients of different ages and at different stages of illness, but each requires his or her character to be considered and varying methods to be pursued to suit idiosyncrasies and tastes. As a rule average nurses, only a few years ago, were quite unqualified to understand or practice such a system.

That occupation and amusement are curative agents no one can doubt who has watched the working of many agencies upon the insane, and although in some cases no cure is possible, the general good is increased when idlers can be induced to employ themselves; and when curable depressed patients can be got even temporarily to forget their distresses they are being gently propelled along the road to recovery.

CLINICAL NOTES AND CASES.

Notes of some cases of Folie à Deux in several members of the same family. By OSCAR WOODS, M.D. Dub., Medical Superintendent of the Cork District Asylum.

In the *Journal of Mental Science* for January, 1889, I published a case of folie à deux in five members of one family. Since then several similar cases have come under my care, the history and symptoms in each case being so much alike that I think a few notes regarding them are worthy of record.

Daniel D., aged 50, father; Margaret D., aged 50, mother; Patrick D., aged 21, son; and Kate D., aged 19,

daughter. These patients were all admitted into this asylum on March 27th, 1890, in a state of acute hysterical mania, the females being much the worst, and quite incoherent. The history obtained was that four days previously Patrick, who was a weak-minded and strumous lad, got a weakness while in Chapel. He was taken home, attended by the clergyman, and has since been ill. Nothing further was known until the constabulary found them, on the 26th, barricaded in their house, and on bursting the door open they were all found fighting so savagely that it took several people to separate them, and the mother had attempted to burn a younger child, believing "it was a spirit." In the district it was believed they had become insane from eating the meat of a sheep that had died of hydrophobia; another account said they had been living on putrid meat.

On admission, all were very excited, the women, especially, throwing themselves on the floor and shouting. They could not be got to answer questions, and rambled in an incoherent manner of visions they saw, and asserted that they were all damned.

March 29th.—Men much improved; women still excitable, especially the mother.

April 5th.—Steadily improving, men sent to work on the farm.

April 11th.—All continued to improve, and were to-day discharged.

John C., aged 45, admitted December 20th, 1896; Daniel C., aged 35, admitted December 20th, 1896; Kate C., aged 32, admitted December 22nd, 1896; Ellen C., aged 30, admitted December 22nd, 1896; Maggie C., aged 24, admitted December 22nd, 1896. These patients were all admitted into the asylum within two days, with the following history:—

John had been for some months in very delicate health. The week before admission he became very violent. He was cared for almost altogether by Daniel, who lost much rest and took insufficient food, and for the last two days he also had been violent and unmanageable. The three girls, believing it was a visitation of Providence, and having obtained little sleep for some days, and taken little food, also became insane. Maggie and Kate became excited and violent on the 20th, and Ellen on the 21st. Ellen had been in an asylum in America some years ago, but recovered. No distinct proof of hereditary predisposition could be obtained, but two first-cousins, one on the father's and one on the mother's side, are at present inmates

of this asylum—and some relations of their cousins died here.

Many sensational paragraphs appeared in the local papers as to the cause of the insanity in these cases. The constabulary, from enquiry, firmly believed it was produced by eating tinned American meat, while the clergyman of the parish wrote and informed me that he was absolutely certain it was caused by eating the flesh of a fowl bitten by a mad dog. Although fairly well-to-do, they lived most penuriously, and tried to save money off a poor small farm.

On admission, John was very excited, much emaciated, and was in an exhausted condition. Stethoscopic examination revealed the fact that he was far advanced in phthisis, and had a dilated heart. During the first night he became violently excited, and had to be removed from the observation room to the padded room.

Dec. 22nd.—Continued very restless and exhausted, and got only a few hours' sleep last two nights. Took his eggs, milk, and whisky fairly well.

Jan. 2nd.—Continued steadily to get weaker and died to-day.

Daniel, on admission, was very thin and exhausted. A careful examination of his chest could not be obtained owing to his excitement.

Jan. 22nd.—Continued very violent and excited, but took his nourishment fairly well.

Jan. 28th.—On the 25th had to be tube fed. On the 26th rejected everything given him by tube, and was supported by suppositories and nutrient enemata. He, however, sank, and died to-day.

The condition of the three girls on admission was much the same. All were restless, singing religious songs, rambling and incoherent in speech with numerous delusions of a religious character.

Maggie and Kate continued in a state of acute delirious mania for a week, when they both began to improve, and their progress continued uninterruptedly till their discharge. Ellen was not quite so intelligent a girl as either of her sisters, the mania was not of so acute a type, progress towards recovery was slower, and on Jan. 11th she was attacked with febricula, with which she was confined to bed for three weeks, during which period she was delirious, incoherent, and much reduced in strength.

Maggie and Kate were discharged recovered on Feb. 2nd, and Ellen on April 15th, 1897.

Many similar cases have come under my observation in Ireland; no doubt many are reported from foreign countries, but so far as I am aware, few cases have been reported in England of whole families becoming insane from being in direct communication with one member already suffering from insanity.

During the last twelve months a mother and son were admitted into this asylum on the same day, the former being a recurrent case of insanity, the latter, from association with his mother, getting a violent attack of acute delirious mania which lasted several weeks. While the mother has improved but little, the son, to whom the insanity was communicated, is able to work out, and will probably soon recover. In December last two sisters were admitted within six days of each other; the younger, aged fifteen years, having been insane for about three months, the elder apparently developing her attack of acute mania from anxiety and constant association with the sister. In this case there was a strong hereditary predisposition; the father and mother having both been insane, and the paternal grandfather, uncle, and aunt all committed suicide by cutting their throats.

While, therefore, in some of these cases there was a strong hereditary predisposition, in nearly all there was a scrofulous and neurotic tendency. In the first two, shock acting on constitutions already enfeebled appears to have been the exciting cause. The patient primarily attacked in each case proved to be the least hopeful as regards ultimate recovery. I look on all the cases as of the same type, highly neurotic persons living in remote districts, having little to divert their thoughts from their own surroundings, and when anxiety arose they were unable to bear the strain. Most of the patients developed strong religious delusions, believing their illness was a direct "visitation of Providence" for their evil deeds, and, in the case of the D.'s, an attempt was made to murder a child, believing it was a fairy. An actual murder was committed in the case reported by me in 1889, under exactly the same impression. During last year a murder was committed in another county in Ireland under the same belief, when several members of the same family became insane.

Sudden Death from Rupture of a Thoracic Aneurism in a Case of Dementia. By THOMAS B. WORTHINGTON, B.A., M.D.,
Superintendent Hants County Asylum, Fareham.

In October, 1882, when Assistant Medical Officer at the Sussex County Asylum, I published some short notes on a case of sudden death from rupture of a thoracic aneurism in a patient suffering from melancholia; a somewhat similar case recently occurred in this asylum.

History of Case.—J. W., æt. 54, was admitted in January, 1894. She was a soldier's widow and had been a mid-wife, but became a camp follower, and for some time before admission was an inmate of the Farnham Union. She was addicted to drink and had had syphilis. Nothing was known of her relations.

When admitted she had no memory for recent events and could give no rational account of her life during the past few years. She was pleasant and cheerful and quite willing to do anything she was asked. Four days after arrival she was transferred to the laundry, where she worked to the day of her death. She was stout and had always a hearty appetite and never complained of feeling ill or of being in pain. In the summer of 1895 she had an attack of syphilitic psoriasis, which soon passed off under treatment of a specific nature.

At dinner time, on 26th January, one of the laundry-maids found her sitting on a seat in the w.c. and told her the dinner bell had rung. She replied that she was not yet ready to go to the dining-hall, but did not in any way complain of sickness or pain, so the laundry-maid left, and in a few minutes when she returned she found her dead; still sitting in the same place with her head inclined forward and to the left side.

Post-mortem examination 20 hours after death:—

The Brain.—Weight 45 ozs.; the skull cap was thick and hard. The basal arteries were slightly atheromatous and the grey matter was somewhat atrophied, otherwise there was nothing apparently abnormal.

The Heart.—Weight 21 ozs.; the myocardium was infiltrated with fat, the muscle having almost disappeared, the walls were thickened, and the cavities all dilated. The pericardium was adherent on the right side and immensely thickened and very rough, and weighed, when detached from the heart, 22 ozs.; in places it was half an inch thick and was covered with semi-organised lymph.

The Lungs.—The structure of both was normal, but the left was adherent from old pleurisy.

The Liver, weight 66 ozs., was congested, fatty, and friable, and was firmly bound to the diaphragm and adjacent viscera by old adhesions.

The Kidneys.—Their surfaces were granular and the capsules adherent; in each the cortex was atrophied.

The Spleen, weight 12 ozs., was firm and large.

Death was due to the rupture of a large aneurismal dilation of the ascending portion of the aorta which had burst into the pericardium by a small irregular aperture about an inch and a half above the semi-lunar valves on the left side; there was a large recent clot in the pericardial cavity.

The pelvic viscera were bound by adhesion from old cellulitis, so that there was no pelvic peritoneal cavity whatever. In the superior mediastinum there was a small hard calcareous mass situate behind the left edge of the manubrium and connected by scar tissue with the scar above noted.

Most of the remarks I made about the former case apply with equal force to this.

The patient was always cheerful; she never complained in any way and looked about the last person in the asylum likely to die suddenly, and yet a post-mortem examination proved that there was hardly a healthy organ in her body.

The condition of the pericardium calls for special notice, and its weight, 22 ozs., exceeded by an ounce that of the heart itself. It was very adherent on the right side and had to be dissected from the heart.

Aneurisms in women are, from their occupations, much rarer than in men, but in this case I have but little doubt that the starting point of the trouble was due to syphilitic disease of the coat of the aorta.

Case of General Paralysis, Commencing with a Period of Melancholia, and Terminating very Rapidly. Reported by E. HOBHOUSE, M.D., Assistant Physician, Sussex County Hospital, Brighton.

The interest of this case lies in the fact that the paralytic symptoms were preceded by a period of depression, lasting about nine months, during which a determined attempt at suicide was made; and, secondly, that the paralytic symptoms, when they did appear, progressed with extraordinary rapidity, their total duration being only five months.

T. K., male, æt. 30, with nothing special in the family or personal history, and no history of syphilis, began to be depressed, owing to business failures apparently, in the early part of 1893. In March he made a determined, but unsuccessful attempt to shoot himself. He had a good deal of sexual hypochondria, and was depressed about religious matters as well as his commercial speculations. This state of things continued till October, with little change, at which time he was seen (about October 20th) by Dr. Eskridge,* the Colorado State expert in insanity, a most experienced and careful observer. He then presented no symptoms beyond those of pronounced depression; but when I saw him on November 20th, by Dr. Eskridge's request, the symptoms of general paralysis were so well marked already as to be quite unmistakable. He had the silly fatuous smile, hesitating speech and tremor of lips and tongue; the symptoms of depression were gone, and instead he showed not ideas of grandeur, but an altogether too complacent self-satisfaction, with apathy and indifference to external circumstances. The knee reflexes were very feeble, and the pupils inactive and unequal. I warned his relations, and recommended his being put under care, but wholly without effect. Looking to the rapidity of onset I ventured the opinion that the course of the disease would probably be proportionately rapid. I saw him again on Jan. 4th, 1894, when the advance of the disease was most marked. He was already passing into the demented condition, unable to dress himself, almost unable to feed himself, though with a good appetite, and refusing to answer questions; he could still walk, and wandered about listlessly, doing nothing; the face had lost expression, and was fat and greasy looking.

His parents determined to take him to Southern California for a change, contrary to my urgent advice, and he remained there till he died, at the end of March, 1894. His father told me subsequently that he remained able to walk, though getting weaker mentally until a few days before his death, when he was suddenly seized in the street with very severe pain in the back, after which he never moved again, and a few days after he died quite suddenly, in what (from the description) seemed like a syncopal attack, as there were no convulsions, though it might have been a very sudden apoplectiform seizure. There was nothing to show

* To whom I am indebted for permission to publish the case.

what the pain in the back was due to, but it may very well have been spinal meningeal hæmorrhage, which has been recorded occasionally in these cases. The whole course of the disease from the onset of the characteristic symptoms was thus only five months, as that could be dated pretty accurately between the 20th of October and November 29th, 1893. We may, of course, with great probability regard the preceding melancholia as connected causally with the pathological processes which gave rise later to paralytic dementia, but we cannot say what the relation was; there was nothing in the symptoms to differentiate it from the ordinary attacks of melancholia, which terminate so often in recovery more or less complete, or to show that it was really the prodroma of general paralysis.

I believe that it is not very common for general paralysis to be preceded by much depression, and that suicidal attempts in the early stage are rare, so that it seemed worth while to place this case on record.

A Case of Chronic Mania, with Notes on Treatment. Reported by KEITH CAMPBELL, M.B. Edin., James Murray's Royal Asylum, Perth.

Mrs. B. H. M. I., a widow, aged 43 years, was admitted to this asylum on 25th October, 1894, labouring under an attack of subacute mania.

History of Case. — *Family:* — Aunt and grandmother insane. Father died æt. 80; paralysis. Mother died 14 days after patient's birth. *Personal:* — At puberty patient began to grow very fast, and had to be kept from school. Mental capabilities average. At 21 slight depression about religious matters; travelled; recovered. At 23, carriage accident, by which she sustained internal injuries. She married a man who was dyspeptic and phthisical, and died 19 months before patient's admission. There were no children and no miscarriages. At time of husband's death she was unnaturally calm, but she brooded over it. There is a probability almost amounting to certainty that both husband and wife were addicted to alcohol. She became talkative and fanciful a fortnight before admission.

On Admission. — She was well-developed, but poorly nourished. She was anæmic, but there was no organic disease. Her menstrual periods recurred every fortnight, and were excessive.

As regards her mental condition, her memory for recent events was not entirely gone, but owing to the maniacal condition she could give no coherent account of them. She could not fix her attention. She had many fleeting delusions, some of a peculiar nature respecting her hands. She was extremely sleepless.

Progress of the Case.—For the first week she was very restless and extremely sleepless. She was anæmic, with a very feeble pulse, and she would take little nourishment. She was put on digitalis in 7m doses and brandy at night, but these made no difference. A great factor in her sleeplessness was marked hyperæsthesia of the sense of hearing. The slightest sound disturbed her. Up to November 5th she lost ground rapidly; the anæmia increased; she bit her lips and tongue till they were extremely swollen; she could be got to take little nourishment, and the sleeplessness continued.

On November 6th she had bromidia 3ss, repeated in three hours. This gave her two hours' sleep through the day, but failed at night, and she was as restless and sleepless as ever. The bromidia was repeated, but she did not benefit much from it. Towards the end of this month she got into a habit of sleeping for a few hours on alternate nights, the sleep, no doubt, of exhaustion. During all this time she was quite incoherent.

On December 1st she was visited by a lady friend, to whom she spoke quite connectedly, the first coherent sentences she had uttered since admission. From her talk it was evident she had observed things all the time, and knew the names of nurses, doctors, etc.

December 4th.—She had paraldehyde for the first time, and slept well. She was very restless next day.

On the 9th she slept four hours without a drug, and thereafter she had quieter nights, the best giving about five hours' sleep. The motor restlessness diminished somewhat, but she hardly improved physically, and the amount of nourishment she took was very small. She was now at the table, and was sent to a convalescent gallery, but very soon she got worse again, and very sleepless. Pot. Brom. and Cannab. Indica had practically no effect. She could not stay in this gallery, and was put to bed, but this only produced a temporary diminution of the excitement. She had Pot. Iod. with digitalis, but this gave no effect physical or mental. She continued like this with a very poor pulse, violent and destructive, till September. She now developed a hæmatoma, which was blistered. She was quieter for a week. Her excitement then increased, she got quite homicidal, and the only thing that had any effect was fairly large doses of sulphonal. This drug also enabled her to get some sleep.

January 22nd, 1896.—Thyroid feeding, 60 grains per diem for

eight days. The physical reaction was present, if not very marked. Mentally no improvement.

February 17th.—Patient was sick, and much more connected and sensible for a little, but almost immediately relapsed.

February 24th.—March 12th.—Two other short lucid intervals.

On December 11th she had a paralytic attack affecting the right side, with entire insensibility of both pupils.

Patient rallied so far as to indicate pain in the head and a knowledge of her surroundings.

She gradually sank, however, and died quietly and suddenly early on December 14th.

After death the temperature in right axilla rose to over 105° F.

Post-mortem.—There was considerable thickening and condensation of the cranial bones. The left side of the skull was twice as thick as the right, which was, however, thickened also, especially posteriorly. The left occipital region was especially very thick.

The *dura mater* was adherent to the bone over both right and left frontal and parietal regions, and there were slight adhesions in left occipital region. There was general thickening especially of left side. The outer surface was shreddy and vascular. The sinuses were engorged.

Report on *Brain* by Dr. W. Ford Robertson (abridged):—

The whole of the left hemisphere, with the exception of the tips of the frontal and occipital lobes, showed a very marked degree of anæmic softening. The left middle cerebral artery and many of its larger branches were filled with a firm fibrinous clot. The right hemisphere not abnormal, except for some slight thickening and congestion of the membranes.

Microscopic.—(Right hemisphere.) Slight subpial felting, and neuroglia hypertrophy in outermost layer of cortex; the cells contained a marked excess of pigment. Their processes were for the most part intact, in some commencing varicose atrophy. The chromophile elements of the protoplasm everywhere indistinct. The gross cerebral lesion on the left side was the result of embolism. The microscopic changes of right side were those of chronic insanity with lesions of a more acute character affecting the nerve cells, which were undoubtedly to be attributed to the general cerebral disturbance produced by the embolism of the other hemisphere.

Notes on the Case.—The following points are of clinical interest:—

1. The prolonged and continuous excitement, with great motor restlessness and a minimum of sleep in a woman with an extremely weak heart, and in very poor physical health.

2. Owing to the continued excitement a large number of drugs of a sedative nature were tried.

1. *Bromide and cannabis*, no relief.
 2. *Digitalis*, slight improvement in pulse; no relief of maniacal symptoms. (This drug is often of use as a calmative in excited melancholia with weak cardiac action).
 3. *Bromidia*, in small doses, producing quiet and often short sleep during the day, but no relief as the excitement rose in the evening. (Bromidia, except in large doses, is of little use in mania; it is in the restlessness and mental pain which precedes a sleepless night in melancholia, that it is useful; just as it gives good results in periodic neuralgias, coming on on going to bed, which prevent sleep).
 4. *Paraldehyde*, as a purely hypnotic, gave excellent results, but next day the excitement was often more marked.
 5. *Sulphonal*, the best drug tried, both for producing sleep and reducing motor restlessness.
 6. Hot *stimulants*, though patient was very weak, gave no relief.
 7. After some weeks of the maniacal excitement she slept on alternate nights, for a few hours, a sleep of exhaustion.
3. Thyroid extract, in full doses, was tried, and gave no result mentally, though the signs of physical reaction were present.
4. Although the case was probably alcoholic there were no hallucinations, but there was marked hyperæsthesia of the sense of hearing.
5. There were short transient intervals of quiet and lucidity, in the midst of this prolonged brain storm.

A Case of Epileptic Idiocy, Associated with Diffuse Lipomata, Ichthyosis, and Nævi, treated with Thyroid Extract: Improvement. By NATHAN RAW, M.D., B.S., Medical Superintendent, Dundee Royal Infirmary.

The following remarkable case has been under my care since October, 1896, and is of interest to those who have treated cases of insanity with thyroid extract.

G. R., aged 13, one of a family of six (youngest); four of the others died young of diarrhoea; the eldest, aged 26, is moderately developed and mentally good.

His mother died three years ago of paralysis—no mental defect

noticed. Father alive, and mentally quite normal. At birth the boy presented a swelling on the right cheek and side of face. Two large nævi on his body, and large lipomatous masses on his back and shoulders. At the age of three he first developed epileptic attacks, which have continued without intermission once a fortnight, until January, 1897, since when he has had no fit. He has also constant involuntary twitching of hands and feet.

On Examination.—He is an average-sized boy, fairly well developed, and answers questions slowly, but rationally. Expression is cheerful, but idiotic, inclined to smile in a curious way when looked at, the face being always drawn to the left or sound side. Face ruddy, capillaries well dilated. Both sides of the head appear uniform; circumference of head at superciliary ridges, $19\frac{1}{2}$ inches; distance from external canthus to centre of pinna, $3\frac{1}{2}$ inches. The right cheek is enormously thickened, and consists of fatty growth; malar bones, and superior maxillæ appear normal. The nose is small and flattened, deviating slightly to left; lips thick and drawn to left. No paralysis of face. Palate high and arched, V-shaped, vomer prominent. The teeth are well developed, but irregular and carious. The lower incisors are not close together, and the central incisors and left lateral incisors are notched.

The lower jaw is quite uniform. On careful examination no trace of the thyroid gland can be detected, the trachea being quite defined and uncovered. The surface of the skin is dry and harsh.

On stripping the boy a remarkable condition is seen. The skin of the feet, legs, thighs, and lower part of abdomen, shows a well-marked example of congenital ichthyosis. The epidermis is honey-combed in appearance, best seen over external surface of both thighs. On the anterior aspect of the legs several larger scales are seen, some of which are being detached. There are no epidermal thickenings. Genitals quite free.

The front of the neck also shows ichthyosis, and to a slighter extent the front of the chest and back. Face and hands quite free.

In the centre of the thorax is a large blue discoloration, due to distended veins (nævus); this mass measures 5 inches by 3 inches, with its centre over the middle of the gladiolus. Again, there is a large purplish discoloration, stretching from the nipple line on the left side, backwards and upwards towards the spine, measuring 10 inches by 5.

Some of the smaller nævi are seen on the right side, with much distended veins. On examination of back the right shoulder is seen to be more prominent, the scapula projects, and there is some lateral curvature of spine to the left side.

In the centre of the back is a large, soft, doughy tumour, feeling like a lipoma.

The whole of the left side of the back shows an enormous swelling, extending from the fifth dorsal vertebra to below the crest of

the ilium, measuring 10 inches by 6. There is another smaller one on the right side. The curious point noted is, there is no enlargement over the nævoid areas. The respiratory and circulatory systems are normal.

Mental Condition.—He has gone to school for two years, but is mentally weak. He has no idea of arithmetic, and guesses at everything. He knows ordinary facts—such as the days of the week, hours, &c., and can answer ordinary simple questions slowly, but not always accurately.

Treatment.—More with a view to do something if possible for the ichthyosis he was put on thyroid extract, grs. v. (Burroughs and Wellcome) once a day, and for some weeks no appreciable change was noted. The thyroid was increased to two tabloids, equal to 10 grains per day, and in the course of three weeks a marked change was observed; the scales separated uniformly, and the skin instead of being harsh and dry became slightly moist. His hair, previously dry and wiry, also became softer and moistened.

The thyroid was steadily continued for 12 months constantly, with one or two slight remissions, with the result that his general condition, both physical and mental, has much improved.

He has had no fit for over eight months; the ichthyosis is almost invisible, excepting on the legs; his skin and hair are moister, and his mental state is brighter, and altogether more intelligent. Another curious point I have noted is that the lipomata are much softer and decreased in size, the skin over them being soft and wrinkled.

Remarks.—Although I have described the above case as one of epileptic idiocy, yet there are many points in the case suggestive of sporadic cretinism.

In this form of the disease the thyroid is often entirely absent, so that no trace of it can even be found on dissection. In the case above noted, this was so, together with the dry hair and rough, dry, scurfy skin. The intelligence of sporadic cretins is very imperfect, and according to Fagge they often present an extreme degree of idiocy. Their disposition is often mild and tranquil, in this respect differing from the subjects of the endemic form. Lipomata have been before recorded in cases of sporadic cretinism. Dr. Fletcher Beach has recorded a case in the *Trans. Intern. Med. Congr.*, 1881, Vol. iii., p. 627, in which there was no thyroid, and two large supra-clavicular masses of fat.

In another case, by Dr. Beach, these masses of lipomatous tissue disappeared entirely before death. What the exact pathology of cretinism is we do not know, but there seems to be a close relation between goitre and cretinism, the

thyroid deficiency probably only occurring in cretins. Several explanations have been put forward, but the one most acceptable, in my opinion, and that best supported by surgical and experimental inference, is that goitre and cretinism are not antagonistic, but consecutive effects of the same unknown cause (Fægge), that endemic goitre is not a true hypertrophy, but a degeneration of the thyroid, and although a local disease, yet when inherited or supervening early, or when the thyroid is congenitally absent, it produces more widely spread and serious disturbances so as to affect the nutrition of the whole body. This then is a typical case, where the thyroid extract has supplied the exact want, the ichthyosis has almost disappeared, the lipomata are decreased in size, and the intelligence of the boy has improved. Whether or not the congenital absence of the thyroid gland is the primary cause of all his symptoms is at present difficult to say, although the marked improvement strongly points in that direction.

OCCASIONAL NOTES OF THE QUARTER.

The Insane in India.

The Presidential Address on this subject, we may hope, will direct the attention, not only of this Association, but of the Government and the public, to the vast amount of insanity in our imperial dependency, which has been hitherto most grievously overlooked and neglected.

No subject more consonant with the objects of this Association, or more deserving of its most strenuous efforts in improving the treatment of this mass of suffering humanity, has ever been brought before it, and Dr. McDowall is to be congratulated on being the pioneer in so important a field of reform.

Astonishment, that so huge a defect in our Indian administration has hitherto escaped serious notice, is the first feeling that arises in considering the statistics which are placed before us. The reflection quickly follows, that this oversight could not have existed so long unnoted if a Ministry of Public Health formed part of the Government at home and in our dependencies.

Reform under existing conditions we may fear will be both difficult and tedious. The obstacles arising from the prejudices of the people are of the gravest character, as has

recently appeared in the attempts to introduce sanitation against the plague; while the exigencies of the Indian Treasury offer considerable hindrance to improvements involving increased expenditure. Fortunately, however, the existing institutions could probably be made much more efficient by the appointment, as Dr. McDowall suggests, of trained specialists to their management, in place of the turns of duty, by medical officers having no special experience or liking for the work, which now obtains. This much at least could be done with comparatively little outlay, and would, without doubt, lead in a short time to our becoming better acquainted with the needs of the Indian insane, and of the best methods of dealing with them.

The special necessity for additional means of treatment for women is emphasised by the fact stated, that only one woman in 131,578 is confined in an asylum, as compared with one in 33,460 of the men.

That insanity is less frequent amongst women than amongst men in India is not probable, and that many of these women, unaccounted for statistically, have died under more or less dubious circumstances, is certainly not beyond belief.

Lady medical specialists have obviously in this field a great opportunity for useful work, and it is a subject for congratulation that already a number of ladies have gained experience in our British Asylums, and are qualified to undertake this duty. That the earliest workers will have an easy or pleasant task is not to be anticipated, but the honour will at least be commensurate with the difficulty.

Definite action to promote the reforms suggested by this careful and laborious investigation should certainly follow. Our President fortunately is not one of those who "roasteth not that which he hath taken in hunting;" he may be trusted to be as forward in action, as careful in thought, and in any procedure he may desire to adopt there is little doubt that he will be supported by the unanimous voice and influence of the Medico-Psychological Association.

Lunacy Legislation.

The Lunacy Bill of 1897 is dead; it was never expected, indeed, to arrive at the maturity of an Act in the past session, and its demise on reaching the House of Commons was not unexpected, although it occurred so suddenly.

The rule *de mortuis* fortunately does not apply to Parliamentary Bills, since they may always be resuscitated by their promoters, and this, in the case under consideration, will certainly happen. It is desirable, therefore, that the good and evil in this Bill should not be forgotten until they are about to become law, but that the time previous to its resuscitation should be used to bring the influence of the Association to bear, in appropriate channels, with a view to aiding the adoption of the beneficial and the rejection of the unsatisfactory proposals.

The superannuation question is the most important point raised in the late Bill, with reference to the members of the specialty engaged in asylums, and it is most desirable that the reasons for demanding for them an exceptionally favourable pension scale, should be persistently promulgated.

An addition of a minimum of five years to the pension service of Medical Officers, in recognition of the time spent in medical studies, and in obtaining special experience, is an initial claim. Such an allowance is made to the first class in the Civil Service, and without it Medical Officers are at a distinct disadvantage as compared with those lay officials who, beginning as junior clerks, or even errand boys, rise to more highly paid posts.

That service in other asylums should also count towards pension is only justice, which has been too long withheld.

The arduous character of the senior posts in asylums is an obvious reason that the age at which such an officer might retire by length of service should be reduced to fifty, in place of the sixty-five years of the Poor Law scheme.

The danger of bodily injury is a strong argument for the liberal treatment of the Medical Officers, who are especially exposed to the malevolence of those lunatics who consider themselves unjustly detained or who have delusions of persecution. This danger is too much minimised by our specialty; each year some member of the small number of Medical Superintendents becomes the victim of a serious assault, while the number of unchronicled slight injuries and narrow escapes is very considerable. Such risks, however lightly they may be held, are ever present, and should certainly not be ignored in any plea for superannuation terms more favourable than those granted to a Poor Law official who is exposed to no such risk.

The danger to the attendants, although less than that of the Medical Officers, should also not be overlooked.

Fixity and assurance of pension has long been the goal at which the Association has aimed, but even this should not be bought at too great a sacrifice of the claims to liberal pensions which have been so fully recognised in previous Acts.

The reduction of the superannuation allowances to the Poor Law level, without these modifications, would be a distinct breach of the conditions on which Medical Officers undertook office, and would certainly lead to a deterioration in the standard of medical men entering the service in future.

The allowances and gratuities to the sufferer or his dependent relatives proposed in the late Bill, in cases of injury or death, is a distinct recognition of a legislative omission, and is quite in accord with the recent recognition of the employer's liability under such conditions.

The "misstatement in forms" clause is another subject in the late Bill which invites a very strong expression of opinion, and a persistent representation of its atrocity to the general body of the profession, which is assailed by it equally with ourselves.

That a medical man, of whatever standing, should be threatened with two years' penal servitude with hard labour for negligence in a statement of any material fact in a lunacy form is monstrous, even if prosecution can only be by order of the Commissioners or of the Attorney-General.

A considerable number of the profession already decline to fill up lunacy certificates, and with such a clause there can be little doubt that this number would be greatly increased. It is well to remind our legislators that it is even possible, with the increasing solidarity of the profession, that a case of hardship arising from such a clause might involve the whole profession in a refusal to sign certificates, and thus bring about a deadlock in the treatment of the insane.

Prior to the passing of the existing Act there is no doubt that homicides and suicides could be traced to the refusal of medical men to sign certificates of insanity, and this condition of things might be easily redeveloped by the operation of such a clause.

These points and many others in connection with the Bill have been fully considered by the Parliamentary Committee, whose report is printed in "Notes and News," and which bears evidence to the great amount of time and labour that has been given by that body to the consideration and recti-

fication of the Bill, as well as to the success which has attended these efforts.

All these facts are so well known and so thoroughly before the Association, that no more need be said; but we trust that the next Session of Parliament will find us fully armed and prepared to defend our own rights, as well as to safeguard the treatment of our patients.

Attacks on Private Asylums.

The occurrence of a case of death from unascertained injury in a Private Asylum has furnished the *Star* with the means of filling its columns with correspondence abusing these institutions and advocating their abolition.

The *Star* at the same time chronicles a similar case occurring in one County Asylum, and might have recorded, we regret to say, a second case in another.

If the *Star* were logical, therefore, it should equally demand the abolition of the County Asylums; but reason is not a strong point in the emotional outcry of the silly season.

Such casualties are deeply to be regretted, but with the utmost care in the supervision of patients and attendants, they happen under circumstances which again and again have failed to yield a definite conclusion to the most stringent and searching investigation.

Harm rather than good must arise from unreasoned abuse and condemnation of those in charge, who are probably attacked so freely because they are unable to respond.

The imputation of self-interest which is the stock argument against Private Asylums is the emphatic reason why these institutions should be desirous of avoiding such accidents, since their occurrence means ruin, or at all events great pecuniary loss.

The allegations of improper detention, again, show how ignorant are these irresponsible critics of the true condition of the institutions they assail; the modes of admission and certification, the supervision of the Commissioners in Lunacy and of the Magistrates, the freedom of correspondence and complaint, rendering this practically impossible.

These ignorant reformers may probably be astonished to learn that those who are really acquainted with the working of asylums complain that the real fault of the Private Asylum is a too early and ready discharge of patients: their

fault is indeed the exact opposite of too prolonged detention : and this without doubt arises from the fear of being thought to be actuated by mercenary motives.

The same ignorance fails also to recognise the great advantage in treatment which these institutions possess, in the large amount of individual medical attention which they supply ; one medical man often having only ten or twenty patients to care for, and the amount of individual liberty on parole accorded to the inmates of the Private Asylums is thus very great, owing to the intimate knowledge and careful watching which can be given to each case.

The freedom of action of the Private Asylum Superintendent ought certainly to give him a great advantage in initiating improvements in treatment : probably more is owed to the initiative and example of Private Asylums than is usually recognised : and their competition with the public hospitals is assuredly of considerable advantage to the latter.

That the abolition of Private Asylums would be a serious loss to progress in the treatment of the insane is, we believe, the opinion of all who have practical knowledge on the subject.

The present state of the law in regard to Private Asylums, by precluding those members of our profession who have acquired great experience in the treatment of the insane from undertaking their treatment in small numbers, is without doubt a great loss to the community, of valuable professional services. That it is a gross infringement of individual liberty of action there can be no doubt.

The rampant faddism which inflicted this gross injustice on the members of our speciality and the community, is now less powerful than in recent years, and it is possible that a determined and energetic representation of this wrong to the Legislature might even now, or at an early date, repeal this legislative mistake.

Beri-beri in the Richmond Asylum.

Beri-beri bids fair to take its place amongst the wrongs of Ireland. It has either appeared in the Metropolitan Asylum of the distressful country three times in four years, or, if only twice, then the existing epidemic has lasted since August, 1896, and has merely been reinvigorated by the summer weather this year. If popular opinion may be

trusted,* beri-beri has still before it many years of activity, ere the new asylum buildings are completed which will permit its present home to be vacated. Hamlet's words occur to us with a variation to suit the Irish market: "Fixity of tenure is a blessing, but not as your epidemic may be fixed."

The reports by specialists on the structure and condition of the wooden buildings in which it has found such congenial habitation, together with general experience of this disease, leave little doubt that it will be eradicated only by the total evacuation or destruction of these buildings. Of this there seems little hope in the present condition of things.

The responsible authority, if indeed responsibility can be fixed on any one of the governing bodies concerned, is surely wanting in a proper sense of responsibility in not grappling at once, and effectually, with a perfectly remediable source of disease. That the disease has not been largely fatal is certainly no excuse for this want of promptitude.

In the meantime the notoriety has led to European physicians taking advantage of this experiment in the acclimatisation of disease by visiting and studying it in its domicile.

The only satisfactory point in the whole matter is the fact that the nursing staff, in spite of a number of them having contracted the disease, have bravely taken the risk and steadily performed their duty. This, however, should be an additional incentive for the immediate removal of this disgrace to our sanitation and shame to our humanity.

Between the end of May and the present time there have been, we learn, altogether two hundred cases of beri-beri in the Richmond Asylum.

The Annual Meeting.

The Annual Meeting at Newcastle was of the most satisfactory character, and fully testified to the widened objects and interests of the Medico-Psychological Association.

Meeting in the buildings of the Newcastle Medical College, the members were brought into touch with the local medical activities, while to many members of the profession, in and around Newcastle, the Association and its objects have become something more than a name. This approximation of the specialty to the profession at large is indeed one of its worthiest aims, and a strong reason for provincial meetings.

* See Mr. Clancy's letter in "Notes and News."

The work done also was of great interest and value. The important humanitarian subject introduced by the President of itself would constitute a good record, but Dr. Newington's psychological study of music, the histological work of Drs. Robertson and Campbell, the therapeutic interest of Dr. Francis' paper on tuberculosis, and the clinical observations reported by Dr. Woods, etc., fairly cover the ground of scientific research.

The ethical discussion, the evidence adduced by the various committees, of medico-legal activity and influence, of contemplated improvements in the teaching and examination of nurses, are satisfactory evidence of our being alive to our duties, to our patients, the community at large, and to ourselves.

The social side of the meeting was as successful as the work, and will long remain as a pleasant memory to those who had the good fortune to share in it.

The Montreal Meeting.

The late date of the meeting of the British Medical Association at Toronto unfortunately precludes our giving any report of the proceedings of the Medico-Psychological Section. The Association, however, was so worthily represented there that we shall be able to submit a very full report in the next issue of the Journal.

The Presidential Address by Dr. Bucke on "Mental Evolution in Man" was of a striking character, and from the list of papers to be read there is little doubt that interesting material will be forthcoming.

The Moscow Meeting.

The Moscow meeting appears to have been satisfactory both in the numbers attending and in the number of papers read. The section "*des maladies nerveuses et mentales*" received a very strong contingent of our own specialty.

A wave of heat, however, appears to have made attendance in crowded rooms, with the thermometer over 80 degrees, almost unbearable, with the result that the discussions were abbreviated, and the interesting excursions provided were fully attended and appreciated.

Lunacy Legislation in Cape Colony.

Dr. Duncan Greenlees, in a paper read before the South African Medical Congress, deals with the legislative needs of this colony.

The delays and difficulties of obtaining early treatment are forcibly delineated. To obtain the aid of a judicial authority at the Cape often necessitates a long cart journey, and the obtaining an order of admission to an asylum under the circumstances he describes must be a work of time and energy. It is in fact the "reductio ad absurdum" of the legal interference with the liberty of medical treatment.

Dr. Greenlees urges the adoption into the Colonial Law of the "Urgency Order" and of the Scotch provision for the temporary treatment of "incipient and non-confirmed cases."

Many other defects are pointed out, *e.g.*, that a magistrate may issue an order for detention on "medical certificates of ancient date;" and if a person on admission is not insane, the asylum physician has no power to discharge him, but must wait the lapse of the order or get an order of discharge from a judge!

Dr. Greenlees has so closely preserved his connection with the Association, that we wish him every success in reforming the legislative difficulties to which he draws attention.

Increase of Members.

The very considerable increase of members during the past year, recorded in the Council's report, is a most satisfactory testimony to the progressing activity of the Association and of its growing value to those engaged in the specialty.

The Divisional Meetings have without doubt had much to do with this result, and it is to be hoped that a still further advance in our numbers will accrue in the coming year. There are still a considerable number of possible members in the specialty who have not yet joined our ranks.

PART II.—REVIEWS.

Les Somnambules extra-lucides—leur influence au point de vue du développement des Maladies Nerveuses et Mentales. Par Le Docteur LAURENT DE PERRY. Paris: Librairie J. B. Baillière et Fils, 1897. 8vo, pp. 226. Pr. 6 fr.

Dr. de Perry selected as the subject of his inaugural thesis (the present work) the question of the influence of visits to fortune-tellers, faith-healers, and such like upon the minds of those who consult them; a study undertaken at the suggestion of Dr. Régis, to whom the book is dedicated. The four chapters into which the book is divided, deal, the first, with the history of fortune-telling, well illustrating the truth that the credulity of the ignorant is evergreen; the second, with the circumstances under which fortune-tellers carry on their trade, and their salient characteristics, especially with a view to determining the nature of, and explaining the apparent strength of, the influence which many quacks hold on some minds. The last two chapters, and the most important ones, deal with the clinical history of cases of mental and nervous diseases which are either determined by, or aggravated by the so-called clairvoyant fortune-tellers; and with the medico-legal aspect of certain of these cases and of others of a similar nature.

"Somnambule" is, in French popular parlance, a generic term which includes faith-healers, fortune-tellers, thought-readers, etc., with a different meaning to the scientific word "somnambule" or somnambulist; and it is unfortunate that some such unequivocal and inclusive term as sorcerer, which we take it is a person who pretends to tell fates (Fr. "sort," fate—hence "sorcier"), is not more generally used here and abroad instead of "somnambule," fortune-teller, clairvoyant, etc. The definition of a "somnambule extra-lucide," according to Dr. de Perry, is a person who either in the sleeping state, or in a state of simulated sleep, or in the waking state, attributes to himself or herself the power of speaking concerning the past, of knowing the present, and predicting the future; of giving consultations to, and undertaking the treatment of the sick; of influencing friends and enemies, etc.; these marvellous results being attempted

by means in reality most simple, although claiming to be supernatural; and all for the sake of lucre.

Needless to add that historical research shows that this type has always existed—"Nihil novum sub sole;" for the Chaldeans, the Jews, the Greeks, the Romans, etc., etc., had their astrologers, magicians, sorcerers, necromancers, etc., and Dr. de Perry's short account of their doings in history is not the least interesting part of his work. Moreover, just as we find, nowadays, that the consultations of our modern sorcerers may exercise a pernicious influence on some minds, we read that a sorceress is said to have been responsible for the insanity of the Emperor Caligula; and in olden times as to-day the infusion of magic herbs was prescribed by these quacks. In some respects we are less well protected against the devices of sorcerers, and one of Dr. de Perry's grievances against the laws of France is that a satisfactory prosecution of these pests is difficult and often impossible. When poor Charles VI. of France lay ill, an obscure sorcerer was summoned from Guyenne to his bed, but his incantations had no result but "to aggravate the mental affection from which the King was suffering." Two magicians called in subsequently likewise made him worse—with fatal consequences to themselves; for "*carnifex capite truncavit.*" The modern sorcerer's penalty is fortunately (or unfortunately) less severe; the Mdle. Lenormands, Cagliostro, Cheiros, etc., have fallen on more merciful times.

In investigating the *modus operandi* of modern sorcerers, our author has had good opportunities, for Bordeaux is apparently one of the French towns in which their trade is most lucrative—"le paradis terrestre des somnambules;" as many as fifty well-known adepts flourish there. The best kind of practice of this art is carried on by the sorcerer—the medium, who is usually hysterical or highly neurotic—in association with the "magnetiser," who, sad to relate, may be a medical man. As regards the pretended lucidity of the medium, Dr. de Perry only corroborates the general belief of the scientific in concluding that certain phenomena exhibited are due to hypnotic suggestion, and that a good deal is simply humbug. When opportunities have presented themselves of carefully investigating all the circumstances of the case, checking results by counter-experiments, etc., as with Dr. Teste's patient enquired into by the Académie de Médecine, and a case recorded by Pitres, no evidence of

any miraculous gift on the part of the sorcerer has been forthcoming. "The lucidity and good faith of 'somnambules' are equivalent, that is to say, they only exist virtually."

While, as has already been pointed out by Pitres in his "*Leçons Cliniques sur l' Hystérie*," the consultations of sorcerers may endanger patients' lives (prescription of large doses of poisons), it is especially their influence upon individuals predisposed to mental and nervous diseases which is to be feared, and the cases which the author brings forward leave no shadow of doubt upon that point. Harmful suggestion, a subtle poison indeed, plays here a most important part.

In some instances, the mental affection originates directly after the intervention of the sorcerer; in others a pre-existing morbid state is simply aggravated by it. The notes of seven cases are given to illustrate the former group, including a case of hysterical mania with hallucinations of sight, etc., a case of delusional insanity, etc., and the notes of three cases to illustrate the latter.

Moreover there is a third group in which hypnotism or spiritualism may enter as a nefarious agent; for, while hypnotism may do good in suitable cases, and applied with prudence, it may be the source of serious disorders in certain neurotic cases; Cases XI.-XVII., recorded by Dr. de Perry, show the evil results brought about by hypnotic experiments and spiritualistic séances at the hands of these ignorant quacks.

In the last chapter the author shows that crime may be the outcome of the sorcerer's intervention—suicide, theft, and murder. In view of the unsatisfactory condition of the French law directed against unqualified medical practice, Dr. de Perry suggests certain modifications of it which might protect society against at any rate the perpetration of criminal acts at the instigation of sorcerers.

Outside the circle of students of mental science, this book might profitably be read by a number of people who look upon spiritualism, hypnotism, palmistry, fortune-telling, etc., as suitable pastimes and entertainments, and as a means of amusing guests at garden parties and such like; much harm in individual cases may be the result. An unfortunate reading of a hand, a hasty prediction, the thoughtless reading of a character, etc., may on occasion be the starting point of morbid ideas in the minds of predisposed subjects, as is exemplified by Obs. xvii., p. 172.

Morphinomanie et Morphinisme—mœurs, symptômes, traitement, médecine légale. Par le Dr. PAUL RODET. Paris : Ancienne Librairie Germer Baillière et Cie ; Félix Alcan, Editeur. 1897, in 18o, pp. 331.

Contributions on the morphia-habit and morphinomania are mostly scattered in various periodicals; so with a view to stimulating the publication of a good text-book on the subject, the Académie de Médecine decided to award the Falret prize to the author of the best treatise on Morphinomania.

Dr. Paul Rodet's work was deemed worthy of the distinction; and certainly, within the limits of a comparatively small book, the author has succeeded in giving a most vivid account of this disease, its symptoms, and its treatment, to which he has added a most valuable appendix in the shape of a very full bibliography of the subject.

After a short *résumé* of the history of morphinomania, the author discusses the factors which bring about the morphia-habit, laying great stress on the part played by medical men and chemists, who unfortunately often forget their responsibilities in the face of this serious evil. An examination of the statistics of 1,000 cases of morphinomania (the list of which appears on p. 37) is most instructive in this respect; nothing can testify more eloquently to the insidious character of this dangerous vice than the fact that 287 in 1,000 victims of the morphia-habit were medical men, who have such opportunities of witnessing its dire results, and that the wives of medical men form a large contingent. Among the terrible consequences of morphinomania to a medical man the author draws attention to one which is apparently but little known, that is a great tendency to prescribe dangerous doses of the powerful alkaloids to their patients.

Living at high pressure seems to be the great factor in the etiology of this affection, and this is well borne out by an examination of its age-incidence, for 60 per cent. of the cases occur between the ages of 25 and 40.

In Chapter IV. we find a good account of the chemistry of the subject, with the best means of detecting morphia in the urine. Chapter VI. deals in detail with the important question of the symptomatology of morphinomania. Among other points we notice that Dr. Rodet qualifies the widely accepted statement that morphinomaniacs are abject liars; his view is that they only lie under certain circumstances, "when-

ever it is a question related to their vice." Given a patient, however, in a state of craving for morphia, it is quite another matter; he will not only lie but steal, and commit almost any crime to satisfy his craving. With Magnan, he holds that if we exclude the nocturnal terrifying crises, which not unfrequently occur, true hallucinations are present but rarely. As regards the occurrence of true impulsive acts (uncontrollable), which carry with them the notion of irresponsibility, he draws the same distinction as referred to above—a patient who is in a position to satisfy his longing for morphia has no such uncontrollable impulses. Rapid loss of sexual power in both sexes, and amenorrhœa in women, are present in the great majority of the cases; the re-establishment of menstruation during treatment, as in so many forms of insanity, is a favourable sign of recovery. As the morphia taken in the case of pregnant women so markedly affects the foetus, often causing arrest of development among other results, suppression of the habit is contraindicated during pregnancy, in the interest of the child. Suppression should not be attempted in acute illnesses, especially during the course of the infectious diseases, which so markedly depress the nervous system, for grave complications may supervene. In Chapter VI. the author speaks also of the influence of the morphia-habit on the evolution of other diseases—the infectious fevers, syphilis, diabetes, hysteria, somnambulism, etc. Morphinomaniacs tolerate chloroform-anæsthesia badly.

With regard to the complications which may arise from the hypodermic injection of morphia, it is unquestionable that the small subcutaneous abscesses which occur so commonly in the walls of the abdomen and thighs of morphia-habitues, are due to the introduction of streptococci; although the site of the abscess may occasionally be distant from the seat of puncture. Their presence may be a great help in diagnosing morphinomania, although they may mislead the uninitiated; and in this connection the author relates the unusual occurrence of a candidate (the present Dr. Marie) scoring off his examiner (Féréol) over a case of this kind.

Dr. Rodet divides the course of morphinomania into three periods—(a) period of euphoria; (β) period of intoxication; (γ) period of cachexia.

Death in confirmed morphinomania may arise from some intercurrent disorder, from pyæmic infection, syncope, an accidental overdose, marasmus, phthisis.

In Chapter VII. the author enters fully into the symp-

tomatology of that most interesting condition—the morphia craving, which is so characteristic and practically diagnostic of morphinomania, and which renders the treatment of the disease so trying. Although it varies widely in the time of its onset, it often appears two months after the patient has started the morphia-habit. For the impulse to inject himself, which is so often present in these cases, the author suggests the name of *nygmatomania*.

Chapter VII. treats the question of the co-existence of several intoxications; the association of alcoholism with morphinomania, and of morphinomania with etheromania, chloralomania, cocaineomania, etc. With Magnan, he does not share Erlenmeyer's view that a hybrid affection is set up when a morphinomaniac takes to cocaine injections, but believes that there is simply a co-existence of two morbid states, and the prognosis is especially unfavourable.

The responsibility of morphinomaniacs before the law is carefully discussed in Chapter IX., a sharp line of distinction being drawn between the responsibility of one who has access to his drug and a person in a state of craving; the latter, in the author's estimation, is not simply a being with enfeebled will, but an insane individual without responsibility. Incidentally, Dr. Rodet devotes some remarks to the well-known Lamson case: "Had Dr. Lamson been tried in France he would have found enlightened experts who would have shown that the unfortunate man was only partially responsible," and we suppose saved his head—a statement which strikes us as not altogether judicious.

The last Chapter deals with the treatment of morphinomania, and is especially good. The advantages and disadvantages of the various methods of suppression—the sudden, the rapid, the slow—are discussed.

The so-called chemical demorphinisation, or treatment by alkalies, as suggested by Erlenmeyer, the author looks upon as a good adjuvant, which spares the patient much physical suffering during the stage of suppression.

With regard to treatment by hypnotic suggestion, he is wisely sceptical about the results published by Voisin and Bérillon, and it is truly pointed out that this treatment is only in reality the method of slow suppression (with its great drawbacks) in association with hypnotism. It would seem more rational to cure the patient by the rapid method of suppression, making subsequent suggestions of distaste for the drug with the view of preventing a relapse.

The author's conclusion on the question of treatment is that, while sudden suppression may be safely applicable in a few cases, and slow suppression in a limited number of other cases, as a rule the best method is that of rapid suppression, combining with it the physiological treatment by digitalis and spartein recommended by O. Jennings, and such adjuvants as those introduced by Erlenmeyer and Hitzig (the ingestion of alkalies), the use of the hammock and hydrotherapy, always remembering that to treat any disease systematically is a therapeutic error. The subcutaneous injection of *napelline* appears to relieve the morphia craving, which is such a painful condition, and the author believes it is a safe measure, without drawbacks.

As regards isolation, while all cases require it, with careful supervision (Dr. Rodet finds that medical students are of great assistance in this connection), the voluntary boarder system seems to be the only practical way of treating most cases. A few weighty words on the prophylaxis of morphiomania complete a work which is in every way an admirable introduction to the study of a very important subject.

Le Délire Chronique à Evolution Systématique. Par le Dr. MAGNAN et le Dr. P. SÉRIEUX (*Encyclopédie Scientifique des aide-mémoire*). Paris: Georges Masson, Editeur; and Gauthier-Villars et Fils. Pp. 184. Price, 2fr. 50c.

Within the compass of a small book, one of that useful series, the "*Encyclopédie Scientifique des aide-mémoire*," we find a clear account of that form of delusional insanity with which Dr. Magnan's name is especially associated—chronic systematised delusional insanity, and the author's views concerning it well summarised. Nothing can give a better idea of the confusion which reigns on the subject than the brief description in Chapter I. of the views entertained by different authors—mostly the leading alienists of various countries—on delusional insanity, and this is especially accentuated by faulty nomenclature. Briefly summed up, Magnan's contention is that there is a group of cases to which he gives the name "*Délire chronique à évolution systématique*," or chronic systematised delusional insanity, which present a constancy in their onset, course, nature, and termination, and which are clearly defined from other

chronic psychoses, including the delusional insanity of the degenerate, with which this form is usually associated in various classifications. In its regular evolution the delusional insanity of Magnan presents four characteristic stages, which succeed one another in an invariable order: (1) A period of incubation or of anxiety; (2) a period of persecution; (3) a period of grandeur or ambition; (4) a period of dementia. According, therefore, to the phase of the disease, during which the patients are observed, they may be called anxious, or persecuted, or ambitious, or demented, so that a hasty diagnosis, taking no heed of past history or of future evolution, and based merely on a consideration of the character of the leading delusions at that stage, may be altogether misleading and erroneous, especially as regards a prognosis. Esquirol's cases of monomania were no doubt, in part, some of these cases observed during the period of persecution or the period of grandeur. Lasègue was the first to carefully define delusional insanity of persecution, but among his cases were certain degenerates with hallucinations and delusions of persecution resembling Magnan's cases in the second period (of persecution), but differing completely from them by their antecedents, the mode of onset of the insanity, and especially by its ulterior evolution. Again, similar objections to Morel's cases of hypochondriasis with subsequent delusions of persecution and grandeur, and to Foville's cases of megalomania may be brought forward; they include cases very variable in their course of prognosis. German terminology is still more confusing, and Magnan and Sérieux can see no definite entity under the various denominations—*Wahnsinn*, *Verrücktheit*, and *Paranoia*.

In Chapters II. and III. a detailed description of the four successive periods of chronic systematised delusional insanity is given. Some important points dwelt upon by the authors should be noticed, particularly their remarks about the progress of the disease from stage (2) to stage (3)—that of persecution into that of grandeur. There are cases, we are told, and as Falret has also pointed out, where "the transformation would be unperceived if not sought for with care . . ."; ". . . an accidental circumstance is necessary for the medical man to discover its existence . . ."; which may be an answer to certain objections which have been urged in various quarters that delusions of persecution may persist throughout without ideas of grandeur. Moreover, it is not necessary for the patient to proclaim himself God or king

to determine the existence of megalomania; ". . . the disappearance of painful sensorial troubles, the presence of optimism, the exaggerated opinions of himself entertained by the patient, the conviction that he alone has certain powers or qualities, are so many modifications which suffice to alter entirely the colour of the insanity and to transform altogether his personality." That it is necessary in support of the authors' thesis to thoroughly elaborate this point is explained by the bearing which it has on prognosis; for, the third stage reached, the disease may be considered incurable and the prognosis dementia.

Falret and others have thrown doubt on the complication of dementia, and the authors themselves admit that some cases after 20 or 30 years are still capable of "talking rationally on many subjects foreign to their delusions;" and if in many cases the action of age and the existence of senile cerebral lesions (atheroma of vessels, etc.) lead to loss or diminution of memory, sensibility, and to confusion of ideas, etc., the dementia need not be considered as secondary to the mania. However, these cases often do end in dementia, and Griesinger, Baillarger, and Schüle are quoted in support of this contention.

Chapters IV. and V. deal with the important question of diagnosis. Among the clinical forms of insanity which present points of contact or of resemblance with chronic systematised delusional insanity, the authors mention chronic melancholia with delusions of negation and delusions of enormity (Cotard); acute or subacute alcoholic insanity; and in this connection we must remember that in the course of Magnan's disease attacks of melancholia or mania may occur, or alcoholism may complicate the disease and add to the difficulties of diagnosis. General paralysis might lead to errors of diagnosis, but unfrequently, and only for a while. Acute forms of insanity with hallucinations, are of sudden onset, show an absence of systematisation in their delusions, and a marked alteration of consciousness of the individual, and are frequently curable; they should be easily differentiated.

It is, however, when we deal with what our authors call the systematised psychoses of the degenerate that errors are likely to arise; a careful search into hereditary antecedents, the condition of the mind prior to the insanity, the age of the patient, the mode of onset, evolution, etc., according to them, show marked differences. The "persecutors

persecuted," and certain degenerates with delusions of persecution and of grandeur, especially are easily mistaken for cases of Magnan's disease; although the course of the disease in the former never presents the regularity which is insisted upon as the characteristic feature of the latter.

That there are many objectors to Magnan's views, even among his own countrymen, is well recognised; and the answers to objections, especially pages 161 to 167, show that the authors appreciate this, and we may add can be trusted to look after themselves. Only time will show whether the differentiation of chronic systematised delusional insanity from the chronic diseases which certain classifications include under the same head (paranoia, etc.) is a step in advance in our knowledge of the analysis of insane conditions; suffice for the present to say that the authors have produced a most interesting and readable manual.

Recherches Cliniques et Thérapeutiques sur l'Épilepsie, l'Hystérie et l'Idiotie. Par BOURNEVILLE (Médecin de Bicêtre) avec la collaboration de MM. Mettetal, Noir (J.), Regnault, Rellay, Vaquez et Boyer (J.), Vol. xvii. Paris, 1897: aux Bureaux du *Progrès Médical*; et Félix Alcan. Pages c. and 268, with 41 figures and 9 plates. Price 7 fr.

For those interested in the manifestations in childhood of nervous and mental disease, this annual publication of Dr. Bourneville's is a mine of wealth. Apart from institutional details and statistics, it contains much valuable pathological matter, and particulars of cases and of autopsies are graphically given and copiously illustrated.

Section I. deals with the Bicêtre, and the arrangements therein made for the care and training of its idiot, imbecile, and epileptic inmates, who are divided into three distinct departments according to the degree of their infirmity. The lowest grade are subjects only for hospital care; the next undergo systematic training with a view of improving their habits; whilst the highest class, comprising healthy imbeciles, and backward, unstable, perverse, epileptic and hysterical children, are subjected to school discipline and technical instruction; of course, under medical direction. Last year there were crowded into wards planned for 400 no less than 483. The number of deaths during 1896 was 27, and

of discharges 64, while the admissions were 92. Autopsies were made in every case of death but one, and the presence of tubercle is mentioned only in five instances. At the Fondation Vallé 162 female patients were accommodated, and a new building for 100 beds has been brought into use, the architectural arrangements of which appear to be not altogether satisfactory to Dr. Bourneville.

The institution of special classes for defective children, attached to the elementary schools of Paris, is again urged; and the director of primary instruction for the Department of the Seine appears to be favourable to the project.

The clinical portion of the Report contains detailed accounts of 19 cases, including many interesting forms of brain arrest and disease, some of which are figured in full-sized plates. Considerable space is given to the thyroid treatment of myxœdematous idiocy (*sporadic cretinism*).

M. Vaquez contributes an essay on the examination of the blood of patients under this treatment; and M. Pajaud one on the examination of their urine. An increase in the proportion of red corpuscles and of hæmoglobin, with diminution of diameter of the corpuscles, is traced in two cases specially observed. The utility of thyroid treatment in cases of obesity and stunted growth is also illustrated.

With regard to the etiological influence of alcoholism upon idiocy, Dr. Bourneville gives a table showing that in 1000 cases this was a factor in no less than 620, and in 57 of these he states that conception took place as a result of intercourse during drunkenness. A curious case of juvenile alcoholism in a boy of thirteen is recorded, and reference is made to its occurrence in an infant of four!

The subject of sexual hygiene, in relation to defective children, is discussed at some length. Admitting that the evil consequences of onanism in youths and adults have, perhaps, been exaggerated, Dr. Bourneville contends that the habit in young children is most disastrous, and must be combatted by incessant supervision, suitable occupation, and attention to points as to decubitus (which must not be ventral), and suitable clothing both by day and night. Mechanical preventive appliances he distrusts, but has recourse to surgical and medical means where indicated, such as circumcision, opiate liniments to pubis perinæum and coccyx, with the administration of aphrodisiacs, such as bromide of camphor.

The Insane Poor in Private Dwellings and Licensed Houses.
By J. F. SUTHERLAND, M.D., F.R.S.E., Deputy Lunacy
Commissioner for Scotland, &c. Published by Living-
stone, Edinburgh, 1897, pp. 60. Price 1s.

This brochure is an extension of a pamphlet founded on two articles in the *Poor Law Magazine and Local Government Journal*.

The author in his preface professes that it is not merely an historical précis of the forty years' history of the movement in Scotland, but also "an 'up-to-date' statement of the position of the system in this and other countries," chiefly intended for those whose interest is a direct and intimate one.

Commencing with a brief sketch of the state of lunacy in the 18th and early part of the 19th centuries, up to the passing of the Lunacy Act of 1857, which he appropriately describes as the *Magna Charta* of the Insane, he describes the establishment of the General Lunacy Board, with the resulting revelations as to the condition of the insane in private dwellings, reported in 1862 by Sir Arthur Mitchell.

Dr. Sutherland dwells with entirely justified satisfaction on the very striking fact that during the forty years since the passing of the Act an average of 2,000 pauper insane have resided in private dwellings with the occurrence of only one homicidal incident. No higher testimony than this could be given to the principles on which the system is worked or to the skill, care and judgment of those to whom its working is and has been intrusted. Such a record of thoroughness and care is a justifiable source of national pride.

The writer displays his adhesion to the national motto, however, in his criticism of a critic who had the temerity to allude to this one casualty, and to the occasional occurrence of sexual accidents under the system. Even if these latter accidents, as the author seems to suggest, were as frequent in asylums this would be no answer to the criticism. The system has so much in its favour, that it can afford to invite criticism on disadvantages which are as nothing compared with its advantages. Its most strenuous upholders and most experienced exponents would be assuredly averse to shunning or resenting temperate criticism.

If any statistics on this point were given they also

would probably by the smallness of their numbers be equally strong evidence of the general care.

Dr. Sutherland makes four epochs in the boarding-out development, viz., the Act of 1857, the Act of 1862, the Act of 1874, giving the Parliamentary grant, and the Parish Councils Act of 1892. The direct action of the first three is obvious, of the last the relation is less manifest.

Some statistical data of the present and past distribution of boarding-out are next given, in regard to the nature of which opinions might possibly differ, but the sketch, which follows, of the main features of the system, must be of interest and value to those unacquainted with the reports of the central authority, the General Board of Commissioners in Lunacy.

The concluding portion of the work is devoted to boarding-out in other countries, and of this a much more detailed account would have been acceptable, especially of the boarding-out in large towns, such as Berlin.

We must congratulate the author on the clearness with which he has expressed his views, and the details of procedure, &c., thus constituting his work a very useful reference on this important subject, both to those already engaged in its practical working, or who wish to become definitely acquainted with it.

L'Epilepsie. Par le Dr. JULES VOISIN, Médecin de la Salpêtrière. Paris, 1897: Félix Alcan. Pp. 420. Price 6fr.

This book consists of lectures delivered at the Salpêtrière, and contains a systematic exposition of the etiology, symptomatology, prognosis, pathogenesis, and treatment of the various forms of epilepsy. There are some original observations on post-paroxysmal albuminuria, and upon toxicity of the urine and the condition of the blood in epileptics. The studies of Voisin and Péron as to urinary toxicity show (1) that post-paroxysmal albuminuria exists in one-half of the cases; (2) that it is found in all varieties of epilepsy; (3) that the *status epilepticus* appears to be always accompanied with albuminuria; (4) that albuminuria is constant in the same patients, but it is very temporary and very variable in quantity. They found a *hypo*-toxicity in the urine before and during the attack, and a *hyper*-toxicity following it, this showing a veritable elimination of toxines;

the urinary toxicity being always in inverse ratio to the digestive troubles. As regards the condition of the blood, Voisin and Petit made bacteriological investigations, and in two cases found a small short bacillus with rounded ends which they are inclined to regard as analogous to the "micrococcus eclampsie" described by Emile Blanc in cases of puerperal convulsions. However, it is admitted that the observations made are too few to be conclusive.

As regards treatment there is but little to note. The substitution of an organic phosphated product for mineral phosphorus under the name of *osséoneurone*, is favourably commented on from the therapeutic point of view, and cases illustrating its beneficial use are appended. Injection of artificial serum is also well spoken of, in conjunction with frequent and prolonged bathing at 32° C. For excitable epileptics a solution of potassium bromide with nitrate of pilocarpine has been found useful by Voisin.

Briefly, we may summarise Voisin's views as to the causation of epilepsy thus: (1) heredity is in most cases the predisposing factor, and (2) toxicity of the blood is the exciting cause. (3) Structural abnormalities are exceptional.

PART III.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

ANNUAL MEETING.

The fifty-sixth annual meeting of the Association was opened in the College of Medicine, Newcastle-on-Tyne, on Thursday, July 29th, 1897, Dr. W. J. Mickle, retiring President, in the chair.

The PRESIDENT having announced that Dr. Percy Smith desired to retire from the General Secretaryship, and having thanked Dr. Smith for his services, and expressed the regret which the Association felt at his retirement, the election of officers for the ensuing year was proceeded with, the following being elected:—

<i>President-Elect</i>	A. R. URQUHART, M.D.
<i>Treasurer</i>	H. HAYES NEWINGTON, M.R.C.P.E.
<i>Emeritus-Treasurer</i>	J. H. PAUL, M.D.
<i>General Secretary</i>	ROBERT JONES, M.D., F.R.C.S.
<i>Registrar</i>	J. B. SPENCE, M.D.
	H. RAYNER, M.D.
<i>Editors</i>	A. R. URQUHART, M.D.
	CONOLLY NORMAN, F.R.C.P.I.
	E. GOODALL, M.D.
<i>Auditors</i>	E. B. WHITCOMBE, M.R.C.S.
	T. SEYMOUR TUKE, M.B.
<i>Divisional Secretary for Scotland</i>	A. R. TURNBULL, M.B.
<i>Divisional Secretary for Ireland</i>	OSCAR WOODS, M.D.

<i>Divisional Secretary for South Western Division</i>	} P. W. MACDONALD, M.D.
<i>Divisional Secretary for South Eastern Division</i>	
<i>Divisional Secretary for Northern and Midland Division</i>	
	E. W. WHITE, M.B.
	W. CROCHLEY CLAPHAM, M.D.

New Members of Council:

C. E. HETHERINGTON, M.B.	ALFRED TURNER, M.D.
JAMES M. MOODY, M.R.C.S.	LANCELOT W. ROLLESTON, M.B.
G. RUTHERFORD MACPHAIL, M.D.	A.D. O'C FINEGAN, L.R.C.P.L., <i>vice</i>
P. MAURY DEAS, M.B.	E. D. O'Neil, M.D.
WILLIAM R. WATSON, L.R.C.S. & L.R.C.P.E.	

ELECTION OF MEMBERS.

On the motion of Dr. NEWINGTON, seconded by Dr. A. R. URQUHART, Dr. Jules Morel, Corresponding Member of the Association, Commissioner in Lunacy, and Medical Superintendent of the State Asylum at Mons, Belgium, was cordially accepted as an Honorary Member of the Association.

Dr. G. Buschan,* of Stettin, and Dr. P. Näcke,† of Hubertusberg Asylum, Leipzig, were elected Corresponding Members.

The following were elected as Ordinary Members:—James Fielding, M.D., Victoria University, Canada, M.R.C.S.Eng., L.R.C.P.Edin., Medical Superintendent, Bethel Hospital, Norwich; proposed by William C. Hills, R. Percy Smith, and Maurice Craig. Neish Park Watt, M.B., C.M.Edin., Resident Medical Officer, Ticehurst House, Ticehurst, Sussex; proposed by H. Hayes Newington, R. Percy Smith, and Maurice Craig. Philip George Mould, M.R.C.S.Eng., L.R.C.P.Lond., Clinical Assistant, Bethlem Royal Hospital, S.E.; proposed by R. Percy Smith, Theo B. Hyslop, and Maurice Craig. Reginald Jeffery Millard, M.B., Ch.M.Sydney, Junior Medical Officer, Callam Park, Sydney; proposed by George H. Savage, George E. Miles, and R. Percy Smith. David Hunter, M.A., M.B., B.C.Cantab., Pathologist, County Asylum, Whittingham, Lancashire; proposed by Frank Perceval, C. T. Street, and H. Rooke Ley. George Mathieson, M.B., C.M. (Glasgow), Senior Assistant Medical Officer, County Asylum, Stafford.

TREASURER'S REPORT.

The TREASURER (Dr. Newington) presented the balance sheet duly signed by the accountant and auditors as follows:—

ANNUAL REPORT OF THE AUDITORS.

We, the auditors, have carefully gone over the items of income and expenditure for the year ending December 31st, 1896.

We have examined and compared the vouchers with the entries in the books and have found all correct.

The only matter to which we desire to draw attention is the writing off of a serious sum owing by members who have been removed from the Association. This, however, was duly authorised by the Council.

T. OUTTERSON WOOD.
E. B. WHITCOMBE.

June 10th, 1897.

The TREASURER said, apart from the matter to which attention had been drawn by the auditors, there was very little to remark. The satisfactory finan-

* Dr. Buschan is the editor of the *Centrablatt für Anthropologie*, is a practising physician in Stettin, and is especially known by his contributions on Basedow's disease.

† Dr. P. Näcke, since 1869, has been chief physician of the Hubertusberg Asylum, near Leipzig. His literary contributions are very numerous, several being in antagonism to Lombroso's extreme theories.

REVENUE ACCOUNT—January 1st to December 31st, 1896.

Dr.	Expenditure.	£ s. d.	£ s. d.	Income.	£ s. d.	Cr.
To	Journal, Printing, Publishing, Engraving, Advertising and Postage	547 17 6		By Dividends	...	£ s. d.
"	Examinations, Association Prizes, and Clerical Assistance to Registrar	72 2 2		" Sale of Journal Handbook	...	9 6 7
"	Petty Disbursements, Stationery, Postages, &c.	86 12 6		" Advertisements	...	269 3 10
"	Annual, General, and Divisional Meetings	96 7 8		" Fees, Certificates of Psychological Medicine	...	
"	Rent of Premises at 11, Chandos Street, and care of Office, &c.	45 15 0		" " Proficiency in Nursing	...	138 19 9
"	Audit and Clerical Assistance	6 6 0		" Subscriptions	...	511 7 0
"	Miscellaneous	26 10 6				
	Balance		831 11 4			
			97 5 10			
			<u>£928 17 2</u>			<u>£928 17 2</u>

BALANCE SHEET—31st December, 1896.

Liabilities.	£ s. d.	Assets.	£ s. d.
Journal Account, balance of	42 17 4	Lloyd's Bank :—Bankers	103 13 8
Petty Disbursements Account, balance of	5 9 2	New Zealand Stock.—£3½ % value at this date, £105	328 10 3
Meetings Account, balance of	3 19 1	Sales Account, balance	143 14 4
Rent Account, balance of	10 0 0	Subscriptions Account, balance	70 7 0
Miscellaneous Account, balance of	3 5 11	Gaskell Fund Account, balance	2 19 7
Balance :— Balance on 1st January	528 18 0		
Add : Balance of Revenue Account	97 5 10		
Increase in value of New Zealand Stock	0 12 6		
	<u>626 16 4</u>		
Deduct : Subscriptions written off	45 3 0		
	<u>581 13 4</u>		
			<u>£647 4 10</u>

H. HAYES NEWINGTON, TREASURER.

E. WOODINGTON, F.C.A.

Examined and found correct.
T. OUTERSON WOOD, } Auditors.
E. B. WHITCOMBE, }

June 10th, 1897.

Statement of the Gaskell Memorial Fund at the Annual Meeting, July 29, 1897.

(Brought on from p. 739, J.M.S., Oct., 1896.)

	1896.	2 s. d.	1896.	2 s. d.
July 27. Prize (1895), Dr. Macnaughton	...	25 0 0	July 17. Balance in hand	...
1896.			Dec. 26. Dividend	...
Jan. 23. Davison and Jones*	...	4 1 6	1896.	
Mar. 20. Grover, Humphrey, and Sont	...	9 18 6	Jan. 31. Dividend	...
May 30. A. Wyon†	...	21 0 0	July 5. Dividend‡	...
Balance	...	8 2 1		
		<u>£68 2 1</u>		<u>£68 2 1</u>
1896.			1896.	
Aug. 10. Registrar's Expenses	...	1 7 8	July 20. Balance in hand	...
Fees, Dr. White	...	2 2 0	Cash from Deposit Account	...
" Dr. Mercier	...	2 2 0	1897.	
Prize (1896), Dr. Dawson	...	30 0 0	Jan. 5. Dividend...	...
1897.			July 3. Dividend...	...
Jan. 2. A. Wyon||	...	5 5 0		
July 24. Fees, Dr. White	...	2 2 0		
" Dr. Mercier	...	2 2 0		
July 29. Prize (1897), Dr. Bond	...	30 0 0		
Balance	...	4 5 7		
		<u>£79 6 3</u>		<u>£79 6 3</u>

H. HAYES NEWINGTON, Treasurer.

* Expenses of reinvestment of capital.

† Law charges for appointment of fresh Trustees.

‡ Charges for Die for Medals (£10 10s.) and the Medals for 1896 and 1897 (£5 5s. each).

§ The reinvestment of capital in New Zealand 34 per cent. Inscribed Stock has increased the yearly income from £35 10s. to £46 14s. 2d.

|| Medal for 1897.

¶ This sum was withdrawn from the Deposit Account to meet the cost of reinvestment of capital, law charges, and the preparation of the Die.

N.B.—The Deposit Account on June 30, 1897, stood at £68 7s. 6d.

cial position of the Association shown at the date of the balance sheet had been duly maintained, and he saw every sign of increased prosperity. He made the usual statement as to the Gaskell Memorial Fund.

Dr. CLOUSTON, in moving the adoption of the report, asked the Treasurer if it would be convenient for him to give in future a statement of the items both of expenditure and of income of the previous and current years on the same page. The TREASURER having promised to consider this, Dr. CLOUSTON congratulated both him and the Association on the favourable character of the report.

Dr. MERCIER, in seconding the adoption of the accounts, asked if the increase of £60 in the *Journal* expenses was warranted by increased circulation, and made enquiry in regard to increase in the size of the *Journal*.

Dr. URQUHART answered that the *Journal* had been considerably increased in size, and a larger number printed, owing to increase of sales and of members.

Dr. YELLOWEES pointed out that £138 19s. was derived from examination fees, and without that item they would be very materially on the wrong side. He believed this source of income would be a diminishing quantity.

The PRESIDENT—May I point out that the examination costs are £72, and without them there would still be a balance of £66. If gentlemen would only pay up their subscriptions, we should do very much better. (Laughter.) The auditors reported that we lost £45 in the year under consideration in respect of failures to pay subscriptions. He thought they should strengthen the hands of the Editors in excluding useless material. It was not the quantity but the quality they liked to see in the *Journal*. (Hear, hear.) If the Editors would insist upon the abbreviation of some contributions, probably the expense of printing would be less and the value of the return not diminished.

The report was then put to the meeting and adopted.

PRESENTATION TO DR. BEACH.

The PRESIDENT—A very pleasing duty devolves upon me of presenting to our late hon. general secretary, Dr. Fletcher Beach, or rather our hon. general secretary once removed—we have lost one to-day—this illuminated address voted to him by the Association. I am sure you will all agree with me that the zeal and ardour with which he pursued his duties for many years as general secretary merits our thanks to him, and that we, in losing him, lose a most faithful and most efficient officer of the Association. His work in connection with the general meetings was always very great, having had to perform duties now subdivided. The address only expresses in a mild and ineffective way our obligations to Dr. Beach. (Applause.)

Dr. FLETCHER BEACH said—I have to thank you, Mr. Chairman, and the members of the Association very heartily for your kindness in presenting me with this address. It is one which I hardly expected to receive—in fact, when first brought before my notice I was overcome with astonishment that I should have such a thing presented to me. The work of the general secretary, although very hard, is very pleasant, for it brings one in contact with all the members of the Association, whom one had always regarded with esteem and respect, and which one not in an influential position would not come in contact with. I have made many friends, not only amongst the older members of the Association, but the young ones also. If anything could add to the pleasure I have in receiving this address, it is to receive it from your hands, whom I have for many years regarded with much esteem. (Applause.)

THE GASKELL PRIZE.

The PRESIDENT next presented the Gaskell Prize to Dr. Bond. and remarked that, although members have usually presented themselves for examination, it has not always been bestowed. It was established fourteen or fifteen years ago, and had not been bestowed oftener than once every two years,

which shows that the prize was not lightly given away. He continued—We all know Dr. Bond's expert clinical work, and notice he is not too ready to draw conclusions upon insufficient basis, that he does not take "the bit in his teeth" and run away. Those who always find what they seek are not reliable. Dr. Bond is one of another sort; we welcome him amongst our scientific workers, and he has now attained higher rank by obtaining this medal. (Applause.)

NURSING CERTIFICATE.

Dr. MERCIER brought forward the proposed amended regulations for the training and examination of candidates for the certificate of proficiency in nursing and attending on the insane.

Training.

1. A probationary period of three months is required to be served before an attendant is considered to have formally begun training.

2. Except as hereunder provided, every attendant must be trained for not less than three years (including the probationary period) before he can be examined. The three years must be complete on or before the date of the examination.

3. Any person who possesses a certificate of competence in nursing from a hospital or infirmary connected with a medical school, and having a system of training nurses, may be admitted to the examination for the nursing certificate of this Association after a residence of two years in an asylum. Provided that such candidate shall have had at least one year's residence in such hospital or infirmary, and shall conform to all the regulations for admission to such examination save only in the matter of length of residence and training in an asylum.

4. In cases of an exceptional character in which a person has had large experience of nursing the insane, but has been unable, through no fault of his own, to comply precisely with the regulations governing the admission of candidates to the examination for the nursing certificate, application may be made to the registrar to lay the circumstances of any such case before the Council, which may, in its discretion, order that such candidate be admitted to the examination. Provided that every such application be accompanied by a recommendation from a member of the Association, and by evidence that the applicant has had experience of nursing in an asylum.

5. The system of training required by the Association consists of—

a. Systematic lectures and demonstrations by the medical staff. At least twelve lectures, each of one hour's duration, must be given in each year of training, and no attendant will be admitted to examination who has not attended at least nine lectures in each year.

b. Clinical instruction in the wards by the medical staff.

c. Practical instruction under the head and charge attendants in nursing and attending on the insane, to be arranged at the discretion of the medical superintendent.

d. Study of the Handbook of Nursing issued by the Association. Other books may be used in addition, at the discretion of each superintendent.

e. Periodical examinations, the nature and frequency of which are left to the discretion of the superintendent; but one examination at least shall be attended each year.

6. The scope of the training must be such as to impart a knowledge (1) of the main outlines of bodily structure and function, sufficient to enable attendants to understand the principles of nursing and to render "first aid," especially with regard to the accidents and injuries most liable to occur among the insane; (2) of the general features and varieties of mental disorder; (3) of the ordinary requirements of sick nursing, and especially of the requirements of nursing and attendance on the insane.*

* For particulars see the Syllabus of the examination.

Examinations.

7. The candidate shall obtain from the registrar a schedule, which shall be filled up and signed as required, and returned to the registrar at least four weeks before the examination. The registrar shall not admit to the examination any candidate whose schedule does not comply in every respect with these regulations. The certificate of training in the schedule shall be signed by the superintendent, or in his absence by the acting superintendent, with the consent in the latter case of the President.

8. If, between the time of the signing of such certificates as are required by the schedule and the time of the examination, the candidate should be guilty of misconduct such as, if committed before the signing of such certificates, would have precluded the granting thereof, such misconduct shall be at once reported to the registrar, and by him reported to the President. On such report the President may, if he thinks fit, order that the examination of a candidate be postponed; in which case he shall inform the Council at its next meeting both of the fact and his reasons for thus acting. The Council shall consider the matter, and may order that the candidate shall be refused admittance to the ensuing or any examination; and in that case shall give notice to the registrar, who shall be empowered to return the examination fee, and shall take such steps as will in his judgment carry out the order of the Council.

9. Examinations for the purpose of granting certificates of proficiency to successful candidates will be held by the Association under the following conditions:—

- a. Examinations will be held twice yearly—on the first Monday in May and the first Monday in November.
- b. An examination will be held at every asylum in which there are candidates.
- c. The examinations will be partly written, and partly *visd voce* and practical, the questions in each part being confined to the subjects in the syllabus.
- d. The papers will be set by the examiners of the Association appointed under Article LXXVI.
- e. The examinations will be conducted as follows:—The written examination, which must not exceed four hours in duration, will take place on the days fixed, under the supervision of the superintendent, who is responsible for the observance of the regulations.
- f. The written answers will be examined by two examiners in nursing, appointed by the Council for this purpose.
- g. The *visd voce* and practical examinations will be conducted by the superintendent (or in his absence by the acting superintendent, with the consent of the President) and an assessor, within fourteen days of the written examination.
- A. The assessor will be the present or past superintendent, or the acting superintendent, or a senior assistant medical officer of not less than five years' standing, of another asylum, and must be approved by the President of the Association.
- i. Candidates must satisfy the examiners in both departments of the examination.
- k. The superintendent shall send to the registrar a list of successful candidates after each examination.

Certificates.

10. Certificates of proficiency will be granted under the following conditions:—

- a. The certificate will be in the form appended.
- b. The certificates will be dated, will bear consecutive numbers, will bear the seal of the Association, and will be issued by the registrar.

- e. The certificate will be signed by the examiners in nursing, by the examining superintendent and his assessor, and countersigned by the President and registrar.

Register.

11. A register of candidates who have passed the examination shall be kept by the registrar of the Association.

12. In case of misconduct on the part of the holder of a certificate, a superintendent (or, in private nursing, any member of the Association cognisant of the circumstances) shall at once transmit a report of the circumstances to the registrar, who will lay the same before the Council for consideration. The Council will, if it thinks fit to do so, direct the registrar to erase the name of the delinquent from the register.

13. Superintendents and other members of the Association, on engaging attendants who profess to be on the register, shall satisfy themselves that such is the case by enquiring of the registrar.

Fees.

14 Each candidate is required to send 5s. with the schedule to the registrar. In case a candidate fails to pass the examination, he will be admitted to a subsequent examination on payment of a fee of 2s. 6d. for each such examination.

15. These regulations shall apply to all attendants who present themselves for examination after October 31st, 1899.

Dr. MERCIER said—Some men are born great, some attain greatness, and some have greatness thrust upon them. I stand to-day in the latter predicament. The report which has been circulated is the report of the Educational Committee, and the proper person to move the reception of the report is the chairman of that committee. The chairman is present; but, with that sensitive modesty so characteristic of his nation, he declines the task, and prefers that I should take the responsibility of moving the reception of these amended regulations. At the last annual meeting, as you have heard from the minutes, a motion was passed, referring the whole question of the nursing examination to the Educational Committee. That committee has carefully considered the matter, and its report is before you to-day. It will be in the recollection of members that at the last annual meeting—I will not say that statements were made—but hints were dropped, innuendoes were thrown out, and there was a general atmosphere of rumour that the nursing examinations were not conducted as they ought to be, and that in certain cases certificates were given which ought not to have been given. Very careful enquiries have been made by the Educational Committee, and the result is practically this, that we have been unable to obtain any evidence whatever in corroboration of those rumours. (Hear, hear.) I think we shall be justified in following an historical precedent, and in regarding evidence which is not forthcoming as non-existent. Nevertheless, it is very desirable that these examinations should be above suspicion. They ought to be conducted so as to make it impossible in the future that such doubts should arise in regard to them; and these rather stringent regulations have been drafted with the view of placing such doubts in the future outside the bounds of possibility. The chief alterations that have been made are three. In the first place, the period of training has been raised from two years to three years. That is a very important alteration indeed. In fact, all the alterations are of the very greatest importance. They will have a great and far-reaching influence upon the future of the nursing examination, and I beg to commend them to the very best and most careful consideration of this Association. In fact, I am doubtful whether, in so small a meeting as this, we should come to any final determination at all. (Hear, hear.) There are many superintendents throughout the country who will want their views represented before this matter is finally settled. Before the regulations were settled in committee there was an influential minority opposed to some of the alterations, and this minority included our

registrar, who is in a better position to judge of their expediency, who is more closely in touch with both candidates and teachers, and whose judgment is entitled to more weight than any member of the Association. While the curriculum is raised from two to three years, the examination is remodelled so that in future there shall be two examiners in nursing, who shall examine all the written answers of every candidate throughout the kingdom. In this way the written examinations will be entirely removed from all control by the persons who have trained the nurses, and a uniform standard would prevail throughout the whole country. That, again, is a very large and serious innovation—an innovation so large and serious that there are doubts in the minds of competent judges as to whether it will be found practicable. The number of candidates—between 400 and 500 annually—would give a serious amount of work to two examiners, who could be expected to undertake the work only if they were remunerated. In order to obtain that remuneration, it was proposed to raise the fee from 2s. 6d. to 5s., and that was the third important alteration in the regulations. These amended regulations will undoubtedly increase the difficulty of obtaining the certificate, and will correspondingly increase its value. It is very advisable that the value of the certificate should be upheld and increased. It is very important that the conditions for obtaining this certificate should be so regulated as to raise the standard of efficiency among attendants to the highest attainable degree, but we must be careful that that standard should not be raised to such a degree as to be prohibitive—so that we should not get in the future as many attendants as have been in the past competing for this certificate. These regulations are the work of a body whose humble servant I am, and it would not become me to cast a doubt upon their wisdom, nor do I desire to do so, but I wish to emphasise their importance, so that before their adoption or non-adoption they will have the most careful and complete consideration. On the last occasion these regulations for the nursing certificate were taken up one by one, and amendments were introduced as the Association thought fit. I move that the report be received, and, having done so, I leave entirely in the hands of the Association their adoption or rejection or modification. At the same time I cannot help expressing my opinion that so small a meeting as this is scarcely competent to arrive at a final decision upon this very important question. (Applause.)

Dr. R. PERCY SMITH seconded the reception of the report.

Dr. TURNBULL moved that the report be received, and that the proposals in it be adjourned for further consideration, and suggested that the Association should also authorise the remission of the report to the divisional branches for further consideration, which, in each district, would elicit views towards a proper decision.

Dr. WOOD seconded the proposal of Dr. Turnbull.

Dr. CLOUSTON—The secretary of each division should be authorised to attend and report to the general meeting what his division has done in the matter.

Dr. URQUHART—I wish to point out, as a corrective of Dr. Mercier's figures, that the number of candidates for the nursing certificates of the Association was 637, and if two examiners had to go over 637 papers every year, it meant such a vast amount of work that some statistician would be required to figure out the time occupied in hours, days, and weeks.

After some debate on a point of order, Dr. YELLOWLEES expressed himself in favour of raising the fee to 5s., and of the appointment of two, or, if necessary, four, examiners to decide on their own questions.

The CHAIRMAN—It has been moved and seconded that the report of the Educational Committee be received.

This was put to the meeting and carried.

Dr. CLOUSTON asked Dr. WOOD how the extension to three years would affect the alliance to the Royal British Association of Nurses. He agreed with Dr. Yellowlees that two years was sufficient for their nurses' certificates,

and feared that the three years might be deterrent. He continued—I agree that the fee is of no moment; half-a-crown would not be a difficulty. I believe those of us who have had to conduct examinations from the beginning are unanimous that there should be an independent authority, who does not know the nurses—(hear, hear)—and so strong would I put that point that if our examiners were superintendents of asylums I should hesitate to allow them to examine the papers of their own nurses, and introduce a sub-section that in regard to their asylums they should be referred to the chairman and secretary of the Association.

Dr. CUTTERSON WOOD—I am not a member of the Educational Committee, and therefore have no reason to give way to the proposed extension of the period from two to three years. The question has been asked me by Dr. Yellowlees and Dr. Clouston as to the effect the training for an additional year would have in the affiliation to the Royal British Nurses' Association. Now, the conditions under which we proceed is, first of all, that the nurses hold the certificate of this Association. If they cannot obtain that with two years' practice they should never be a certificated nurse at all; but, in addition to the two years necessary for her certificate, she must have been three years at asylum work; so that a nurse who has been three years in asylum service, and having the two years' certificate, would be qualified to join the Royal British Nurses' Association. It would not help the nurses, according to our present scheme, to raise their period of probation to three years, nor would it stand against them if their training for our certificate only takes two years, for we cover that by having three years' service. (Applause.)

Dr. POWELL—After that expression from Dr. Wood, I should very strongly urge that the term "two years" remains as at present. I am perfectly sure it will debar a very large number of nurses and attendants from attempting to go into the examination if it is prolonged for three years.

Dr. RORIE said it would be a great improvement in the system of examination to have regular examiners appointed having no knowledge of the persons under examination, only the papers before them. With regard to the term, the way nurses prepare for this examination is little better than mere cramming. They read up the society's books, but don't know much more about nursing. I should therefore be inclined to the prolonged system of three years instead of two years. When it was proposed first that a certificate should be granted to nurses, it was on the understanding that there would be a class of nurses raised to a much higher standard than the other nurses, while it was clearly understood that many nurses, for want of education, might remain uncertificated—the certificates were intended for a higher class of nurses. I should, under all the circumstances, be in favour of separate examiners and the period of probation extended to three years.

Dr. URQUHART—I should like to lay one thing before the Society which seems a defect in this report, the absence of any distinct indication that a mental nurse undergoing the period of training has to pass part of that time amongst the sick, the bodily sick and the acute cases in each asylum. (Hear, hear.) One had hoped that it would have been part and parcel of the amended regulations, and I think we should direct the special attention of the committee to this matter in discussing it to-day. I support Dr. Turnbull's motion for the adjournment of this subject, because, although the Educational Committee has given great attention to it, we are not privileged with Dr. Spence's assistance on this occasion. He has given so much assistance and care to the perfecting of this examination, that really he ought to make known his mind upon the whole matter before we come to any conclusion. I don't think Dr. Mercier has had sufficient credit for the way he has worked for the Educational Committee in season and out of season, and I hope, if we find any little fault, or what appears to be omissions, that Dr. Mercier will take note of them and bring them before the Committee, if they have not received that attention which they seemed to deserve.

After further discussion on points of order,

The PRESIDENT—The amendment is as follows: "That the further discussion of the report be adjourned with a view to allow divisional meetings to consider the changes, and that the secretaries be asked either to attend or report the general feeling of their branches, and that the Educational Committee report also on the matter to the next annual meeting."

This was put to the meeting and declared adopted by the large majority of the members present.

THE SECRETARY AS A MEMBER OF COUNCIL.

Dr. CLOUSTON moved—"That the secretary of the Educational Committee for the time being be an *ex-officio* member of Council." The Council, he said, had felt the need of having the secretary as one of their number.

Dr. RAYNER seconded, and the motion was adopted.

PARLIAMENTARY COMMITTEE.

Dr. NEWINGTON presented the report of the Parliamentary Committee, which set out the proposed clause dealing with incipient and non-confined insanity as drafted by a joint sub-committee of the Association and the British Medical Association. He also explained the representations made to the Commissioners in Lunacy in regard to the Lunacy Bill by a deputation which waited on them on June 16th, which were as follow:—

Sect. 2.—The committee suggest that, in view of the great inconvenience to petitioners and to all who are concerned in the validity of an order arising from a want of accurate information as to what Justices are specially appointed under the Lunacy Act, it would be well to provide for the drawing up a complete list of such Justices, and their addresses, from the returns now directed to be made to the Commissioners, under sub-section 3 of this clause. Such list should be procurable on application by all who may be interested.

It is further suggested that the appointment of such Justices should run from January to December of the year subsequent to the Autumnal Sessions at which the appointments have to be made.

Sect. 5.—The committee deprecates the prohibition against a licensee signing a medical certificate in support of a petition for an order for reception into any other licensed house, on the principal ground that the public will thus in many cases be deprived of skilled opinion. It further deprecates the similar prohibition against a licensee making an application for an order. Under these circumstances a licensee in the case of mental disease occurring in his own family, would stand alone in being debarred from undertaking that responsibility which his interest and his duty as a citizen cast upon him.

(This section (5) was altered in the Bill so as to meet the objections.)

Sect. 23.—The committee, while fully appreciating the principle of assured pensions as adopted by this section, deprecates the scale on which such pensions are calculated, unless provision is made for a minimum addition of years for the purpose of computing the pensions, on the ground that nothing has been shown to impair the deliberate opinion expressed by the Select Committee of the House of Commons (1860).

"It would further seem desirable to reduce the time at which committees of visitors may grant superannuation allowances to their medical officers. Their duties are so peculiar, and such painful consequences are known to result from incessant intercourse with the various forms of this distressing disease, when prolonged for many years, that your committee believe that it would tend to greater efficiency of service, if the period of service, which stands at present at 20 years, were reduced to 15."

The committee desires to emphasise the fact that on this report of the Select Committee, the minimum period of service was reduced from 20 to 15 years, and it feels justified in claiming that the placing of asylum officers on the same footing as Poor Law officers is an abandonment of the principle then laid down.

In the event, however, of the views of asylum officers not meeting with full recognition, the committee submits the following clause, as meeting to some extent the justice of the case.

Sub-section proposed to be added to section 23:—

"(b) As regards every officer of an asylum whose duties ordinarily lie, and for a period of 25 years have lain, in attendance, medical or otherwise, on patients in an asylum, 50 years shall be substituted for 60 years, and 25 years shall be substituted for 40 years, and 55 years shall be substituted for 65 years, in clause 2 of such last-mentioned Act."

(The pension clauses had been removed from the Bill at the time of report.)

Sect. 32.—The committee suggests that, as it has been found in some cases that no sufficient protection is conferred by the Lunacy Acts or any other Act, or by Common Law, on persons who, through mental infirmity arising from arrest of mental development, are incapable of managing their affairs—section 116 of the principal Act—which it is proposed to amend by this section, should be further amended by the insertion in sub-section 1 (D) of the following words, after the words "arising from."

(The addition recommended was made in the Bill.)

The recommendations relating to pensions (section 23) received cordial approval from the Commissioners, who authorised the deputation to make known the fact that they have been and are entirely in favour of compulsory pensions.

With regard to section 29, imposing fresh penalties for misstatements, the committee reported to the meeting that it regretted the increased stringency of the provisions, and the appearance in full of all the penalties prescribed; but that it did not feel that it was in a position to offer efficient opposition.

After considerable discussion, in which Drs. Clouston and Yellowlees strongly animadverted on the suggested clause, to provide for early treatment, as drawn up by the committee, it was announced that the Lunacy Bill had been withdrawn on the previous evening (July 28th).

It was then agreed to receive the report and thank the committee, and that the Parliamentary Committee should be appointed as follows:—Dr. Fletcher Beach, Dr. G. F. Blandford, Dr. D. M. Cassidy, Dr. T. S. Clouston, Dr. E. M. Cooke, Dr. J. G. McDowall, Dr. C. Mercier, Dr. H. H. Newington, Mr. H. R. Ley, Dr. Conolly Norman, Dr. Evan Powell, Dr. G. H. Savage, Dr. J. B. Spence, Dr. A. H. Stocker, Dr. R. Percy Smith, Dr. A. R. Urquhart, Dr. J. Wigglesworth, Dr. Yellowlees, with power to add to their number.

EDUCATIONAL COMMITTEE.

Dr. CLOUSTON—The Educational Committee has no report to make. We have circulated the syllabus, which most of the members have seen, and it has been given to the various examining boards on the subject of insanity, and it has been extremely well received.

Syllabus of the Subject of Insanity.

I. General Symptoms and Signs of Insanity. Mental Competence. Fitness to be at Large.

II. Causes of Insanity.

III. Forms of Insanity. 1. States of Weak-mindedness: *a.* Idiocy and Imbecility; *b.* Dementia. 2. States of Stupor. 3. States of Depression. 4. States of Exaltation and Excitement. 5. States of Systematised Delusion and Hallucination. 6. Impulsive and "Moral" Insanity. 7. General Paralysis.

IV. Chief Accessories of Insanity. 1. Suicidal Tendency. 2. Homicidal Tendency. 3. Refusal of Food. 4. Degraded and Perverted Habits.

V. Association of Insanity with Developmental Periods; with the Reproductive Function in its various Phases; with Epilepsies and Convulsive States; and with other bodily conditions.

VI. Morbid Anatomy.

VII. Certification of the Insane and other Medico-legal Aspects of Insanity.

HANDBOOK COMMITTEE.

"The Committee reports that it has decided by a large majority of votes that it will be desirable to adhere as closely as possible to the lines of the present edition, though this will not exclude suitable improvements and additions. The Committee accordingly submits a recommendation that this course should be taken."

Dr. NEWINGTON reported that the edition of the Handbook was exhausted, and it was necessary to have some more. The question had been before the committee, and the substance was in the memorandum; but the question for this annual meeting was whether the present edition of the Handbook was to be a regular upheaval, or the same book with improvements. The committee distinctly recommended that it be authorised to reproduce the book again with suitable improvements, so as not to throw away all the good work put upon it in years past. (Hear, hear.) The people who made it deserved consideration, but, perhaps, not much; the people who bought the book—9,000 copies—had to be thought of; and then the publishers had to be considered—they had dealt with them very loyally, and the production of a new book would be a considerable expense to them, and incidentally to the Association. He moved the adoption of the report, and also moved that the committee be directed to reproduce the book again as a further edition, with certain amendments and improvements, as may seem suitable to them, short of anything like a radical change.

Dr. POWELL seconded.

This was agreed to, and on the motion of Dr. CLOUSTON the committee were reappointed.

REPORT OF THE LIBRARY COMMITTEE.

"Your committee begs to report that a catalogue of books by subjects is required, and when this is done a printed catalogue for circulation among the members will have to be made. There are several important works which are published quarterly or monthly in the library, and these should be bound, so that access to them may be facilitated.

"We estimate the sum of money required for these purposes as follows:—

1. Catalogue of books (subjects), £10; 2. Printing of catalogue, £10;
3. Binding, £25; 4. Incidental expenses, £5; Total, £50.

"The books at present in the library are in good order and well preserved.

"We ask to be reappointed.

"HENRY RAYNER.

"FLETCHER BEACH.

"H. J. MACEVOY."

The report was received and adopted, with the exception that the allowance was made £40, instead of £50. The committee was reappointed.

HACK TUKE MEMORIAL.

The Hack Tuke Memorial Committee are prepared to hand over to the Medico-Psychological Association the sum of about £350 to be vested in trustees, the annual income derived therefrom to be expended in maintaining and increasing the library, of which Dr. Hack Tuke's gift to the Association has proved so valuable a nucleus.

Dr. BEACH, for the Hack Tuke Memorial Committee, reported that they were prepared to hand over about £350, the annual income to be spent upon the library.

COUNCIL'S REPORT.

The SECRETARY submitted the following report of the Council:—

"The Council, in accordance with a resolution passed at the annual meeting in 1896, presents the following report: Since the last annual meeting there have been elected 51 ordinary members, one of whom, however, subsequently withdrew, and there are proposed for election at this meeting six ordinary members. If these are elected, the total addition to the list of ordinary

members in the year will be 56. Besides these, one corresponding member (Dr. Morel) is proposed for election as an honorary member, and two additional corresponding members are proposed, making a total of new members of 58. Against this increase the Council have to deplore, in the first place, the deaths of 10 members, viz., Sir B. W. Richardson and Dr. Lockhart Robertson (hon. members), and Sir J. C. Bucknill, Dr. Langdon Down (of Normansfield), Dr. Marsh (of Lincoln), Dr. Miles (of Kilkenny), Dr. Jamieson (of Aberdeen), Dr. Compton (of Norwich), Dr. Barton (of Wadley), and Dr. H. E. Blandford (of Crowdon), ordinary members. By the deaths of Sir J. C. Bucknill and Dr. Lockhart Robertson the Association has sustained the loss of two members who had both held the offices of General Secretary, Editor of the *Journal*, and President, who had shed lustre on the Association, and whose names were widely known and revered abroad as well as in this country. In Dr. Langdon Down the Association also loses a member of great eminence, and one who took a warm interest in the affairs of the Association. Five gentlemen have resigned their membership for various reasons. Lastly, there is much cause for regret that the names of nine members had to be removed from the register, after due notice, for non-payment of subscriptions. Deducting these 24 names, there remains a net increase of membership of 34, bringing the total numbers of membership to—Ordinary, 506; honorary, 39; corresponding, 12; total, 557, as compared with 523 when the register was last printed.

"The annual meeting in 1896 was held in London, under the presidency of Dr. Julius Mickle, and was well attended, many interesting papers and discussions being communicated.

"General meetings have been held in November, 1896, in London, in February, 1897, at the Borough Asylum, Nottingham, where the Association was hospitably entertained by Dr. Evan Powell, of the Borough Asylum; and in May, 1897, in London. At all these meetings the papers and other communications were of great value. In addition to these the usual divisional meetings have been held. The programme provided for the present annual meeting does not fall behind that of previous meetings.

"The Council have had under discussion during the year the question of the re-edition of the Handbook for instruction of nurses and attendants, and the question of the desirability or otherwise of the admission of certificated nurses and attendants to the membership of the Royal British Nurses' Association. Upon the former matter a report is presented to the annual meeting, and the latter is still under consideration.

"At the February meeting of the Council an application was received from 60 members residing in the Northern and Midland Districts, for the formation of a Northern and Midland Division of the Association, which was acceded to, Dr. Crochley Clapham being appointed Divisional Secretary *pro tem*.

"A similar application was received from 68 members residing in the Eastern and Metropolitan Districts for the formation of a South-Eastern Division, and was acceded to, Dr. Ernest White being appointed Divisional Secretary *pro tem*.

"The two additional Divisional Secretaries become official members of the Council.

"Both these divisions have subsequently held meetings.

"The Council feels that these additional divisions cannot fail to increase the scientific work done by the members of the Association, while affording more frequent opportunities for the meeting of members, which is so necessary in an association whose members are separated by long distances.

"The Council felt that some mark of the appreciation by the Association of the valuable work done by Dr. Fletcher Beach, the late hon. general secretary, in carrying out the arduous duties of the secretaryship for a period of seven years should be shown, and it was therefore decided that an illuminated address should be presented to him at the annual meeting.

"The Council considers that the secretary of the Educational Committee for the time being should be an *ex-officio* member of the Council.

"The suggestion as to the necessity for some alteration in the regulations governing the management of the examinations for the nursing certificate, which was referred to the Educational Committee at the last annual meeting, has been under consideration on several occasions during the year, and a report has been prepared, suggesting several modifications in the rules, with the view of raising the standard of training and examination, and providing further safeguards against the granting of the Association's certificate to insufficiently qualified persons. The question of the regulations for the conduct of the nursing examination for attendants in the Colonies was referred to the Educational Committee, and it is still under consideration.

"During the year 743 candidates (males 357, females 391) entered for examination for the nursing certificate. Of this number 637 (males 299, females 338) were successful; 79 (males 44, females 35) were referred; 32 (males 14, females 18) withdrew; and the result of the examination of two candidates from Cape Colony has not yet been received.

"Twelve candidates were examined for the professional certificate granted by the Association, and it was suggested to one of these gentlemen that he should come up again for examination on another occasion.

"In connection with the valuable Gaskell Prize, which is open annually to competition, the Council have decided that the examiners shall have power to award a second prize whenever, in their opinion, there are two candidates of sufficient merit, and that this second prize be given from the unawarded funds of previous years."

On the motion of Dr. PERCY SMITH, seconded by Dr. CLOUSTON, the report was adopted.

This concluded the business meeting.

AFTERNOON SITTING.

MEMBERS PRESENT.

T. W. McDowall, T. S. Clouston, H. Hayes Newington, H. Rayner, R. Percy Smith, Fletcher Beach, W. Julius Mickle, A. R. Urquhart, J. T. Callcott, E. Powell, David Bower, A. R. Turnbull, Walter Smith Kay, D. Yellowlees, T. Outterson Wood, R. L. Rutherford, G. Hare Philipson, James Rorie, J. Tregelles Hingston, A. W. Campbell, Frank A. Elkins, C. Hubert Bond, Margaret C. Dewar, J. W. Eastwood, W. F. Robertson, Bedford Pierce, T. Seymour Tuke, James Rutherford, J. G. McDowall, J. Carlyle Johnstone, R. D. Hotchkiss, James R. Whitwell, Sir James Crichton Browne, Crochley Clapham, W. L. Ruxton, G. Stevens Pope.

At the afternoon sitting the PRESIDENT (Dr. T. W. McDowall) took the chair. After thanking the members, for the honour they had conferred upon him, in appropriate terms, he moved a vote of thanks to the retiring President (Dr. Mickle).

This was carried with acclamation.

The PRESIDENT then moved that an address be presented to the Queen, expressing the congratulations of the Association on the attainment of the sixtieth year of her reign.

This motion was also carried with acclamation.

The PRESIDENT next alluded sympathetically to the loss the Association had sustained by the deaths of Sir John Bucknill and Dr. Lockhart Robertson. Their personal characteristics were well known. He would refrain from speaking at length upon their professional eminence, and the many debts the Association lay under to those gentlemen, if only for what they did in the early years of the Association. They would all remember how Sir John Bucknill worked, and how he started their *Journal*. (Applause.) He was an energetic and determined man, and an efficient editor. The two gentlemen were bound up with the history and the advance of their Association as

general secretaries. He moved that a communication be sent to the relatives, expressing their great admiration, and at the same time their sincere sympathy.

The motion was unanimously agreed to.

The PRESIDENT announced that Dr. A. E. Macdonald was present as a delegate from the American Medico-Psychological Association, and warmly welcomed him on behalf of the Association.

Dr. McDOWALL then read his address, which, with the subsequent discussion, is printed at page 683.

DR. MERCIER'S MOTIONS ON MEDICAL RETICENCE.*

Discussion on Dr. Mercier's paper, November 19th, 1896.

Dr. RAYNER thanked Dr. Mercier for having brought this subject before the Association, and expressed his agreement with the principles laid down.

Dr. BLANDFORD expressed full agreement with what Dr. Mercier said about professional secrecy in general, but thought that with the insane the question is attended with a good deal more difficulty than in the abstract law and principle that professional secrecy is to be observed. He observed—A patient may come before us, and in a condition of melancholia may not only confide to us delusions and ideas that he may possibly commit suicide, but he may confide to us ideas about his property which may be of very great importance to that property and to his relatives. He may have gloomy ideas with regard to the property which he possesses, and he may be willing, and in fact desirous, of getting rid of that property, perhaps at an enormous sacrifice, and half ruining himself in the process. There are also many cases which come before us which are of very great difficulty, and where we have to observe great secrecy among the different members of a patient's family. We hear things from the patients which we do not care to reveal perhaps to any of the family, or to certain portions of the family. There is scarcely any case about which we are consulted when there is not more or less of family dissension in all directions. I think it a very salutary principle to lay down, that, as far as we can, we must reserve that professional confidence with regard to insane patients that we do with the sane.

Dr. SAVAGE—I quite agree with Dr. Blandford and most thoroughly with Dr. Mercier that there can be only one law. Of course there are exceptions, and one finds many. For instance, a minor consults an alienist, and there are certain symptoms in his history that one thinks should be communicated to his parents. But are you justified, in the case of a young man of 21 presenting certain symptoms, in telling his father and mother that you believe his malady to depend upon this and that? In relationship to this I would mention a somewhat similar case. A father consulted me about his daughter, whom I had not seen, giving me certain symptoms, and I gave certain advice. The patient heard that certain advice had been given problematically on her case, and she demanded particulars as to what information I had received from her father as to her symptoms and what advice I had tendered to him, and when I declined to give any information I was threatened with legal proceedings. So that there are many other points to consider in this relation. I would mention also another case which may be interesting to our profession, and which came before my observation. A child, whom I had seen, the child of a lunatic, was extremely delicate, and it is a question whether that child can be reared. An enormous fortune depends upon the living of that child. It is of the utmost importance for the mother that this child or its representative should live, and the lawyers are afraid that this child may disappear or die, and might be replaced by somebody else. I was requested by the lawyers to examine the child and supply such information to them, as lawyers, as would enable them to write down a description, so that they themselves might be able to identify the child. As this child had been seen by a surgeon I preferred to send the letter on to him, and, as I expected, he declined to have anything to do with it, considering it would have been a breach of professional etiquette. One

* *Journ. Ment. Science*, p. 277, 1897.

feels most strongly that there is only one rule in relationship to this, viz., to "do unto others as you would that others would do unto you."

Dr. KESTVEN illustrated the difficulty of the question by a case of incestuous seduction under the age of 16, and asked—What is my position? I knew of this crime that the lad had committed. The fact was not confided to me by the patient herself; she was a minor. It was the mother who brought the case to me. Supposing the matter had come to the ears of the police, what is my position?

Dr. WHITE thanked Dr. Mercier, and continued—With regard to the last speaker, it has probably occurred to many of us, as it has occurred to me, that in the case he mentioned the medical man would not be in any way justified in betraying the secret committed to his care, for I take it that the mother in that case was the legal representative of the patient, and as such, the secret is the secret of the patient confided through the mother, and therefore it is as important that it should be carefully preserved by the medical man to whose care it is entrusted as though it were one of the most important secrets that he possessed.

*Discussion.**

Sir JAMES CRICHTON BROWNE said he would venture to suggest that the subject might be referred to a committee, who could discuss the practical application. Perhaps Dr. Mercier himself would rather wish for it to go to a committee who could think the whole matter out in all its bearings, and ascertain whether it was covering the ground, or did not cover too much. He could understand cases arising where a man might not be able absolutely as a member of that Association to conform strictly to the terms of the two resolutions which Dr. Mercier moved. All sorts of difficulties and problematical questions might arise, and it would be difficult to lay down a regular rule. The question required the most careful consideration. He would like to recall to Dr. Mercier's mind the question of official reticence. The Commissioners in Lunacy bound themselves to decline information on oath. In 1890 they were ordered not to disclose without permission, and to keep secret everything that came to them in an official capacity till they were by legal authority required to divulge. It was no use binding those who were already bound by that professional confidence. He would strongly urge careful consideration before they bound themselves to any definite policy.

Dr. MERCIER said the matter had been considered with very great care. He expressed in those resolutions a very definite opinion on the subject, and they were framed to be binding after mature and careful consideration. There was no doubt something to be said for the postponement of further consideration. Something was to be said for the other side. Sir J. Crichton Browne said it was a difficult and delicate matter, and it did occur that there might arise cases in which it would be very difficult to apply these conditions regularly; but, as he said when he introduced the subject, hard cases made bad law—i.e., if they allowed the exceptions of any particular case to induce them to make an exception to one general official law, they had better abolish the law altogether. He would not like the members to come to a decision upon the matter without mature consideration, but he must remind the members that they had had ample time—nearly six months—in which to make up their minds. He did not think it too much, therefore, to ask the meeting to come to a conclusion upon the subject that afternoon.

Dr. PERCY SMITH pointed out that the College of Physicians entirely refused to pass any resolution which would become a public dictum on this subject, and for which they would be held responsible. As to the second resolution, he thought it would prevent any publication in the *Journal* of any medical cases in which the patient had told them something. It would take away the opportunity, through non-publication, of spreading anything that would be for the welfare of and conducive to the public safety. He thought it inadvisable that they should pass the resolutions.

* Newcastle Meeting.

Dr. CLOUSTON said that was the first ethical question that had been brought before the Association. It seemed to him for that Association to solemnly bind the members to the thesis that information got from their patients was only to be revealed when it was expedient for the welfare of the patient, or for the public safety, was a large and serious proposition indeed. What Dr. Percy Smith had said applied to a certain extent. For the publication of their clinical cases they used a great deal of information which they got from their patients, and he saw there was no provision when they were placed in the witness-box by which they could answer plain and simple questions of no real significance. He would not like to be the witness standing up before counsel and refusing to answer relevant questions by saying that the association of which he was a member had come to that resolution and bound him not to give information because he got it from a patient. That would look foolish in a law court. (Laughter.) It was a question whether the membership of that Association gave any right or title to bind men's consciences. He held that they could not use the Association for any such purpose, its whole object being for an entirely different purpose. They did not become members to be in any way controlled or influenced in their ethical conduct by any opinion of the other members of the Association. (Applause.) On general principles he was sorry, but he did not possess any faith with regard to the subject, and he thought it would be wrong to commit themselves to any such proposition.

Dr. RAYNER agreed with the previous speaker as to their refusal to be bound by dogmas, and on that ground alone he would prefer not to pass the resolutions.

The PRESIDENT—I must say for myself that if a small committee passes these resolutions I shall protest against them. (Laughter.)

The motions were not seconded, and the next business was called.

Dr. ERIC FRANCE then read his paper on "Tuberculosis in the Insane: its Prophylaxis." (Printed, with discussion, at page 723.)

SECOND DAY.

The Association resumed its sitting on Friday morning in the Lecture Hall at the College of Medicine, Dr. T. W. McDowall (President) again in the chair.

Dr. HAYES NEWINGTON read a paper on "Some Mental Aspects of Music." This, together with the discussion, will be found amongst the original articles at page 704.

Dr. FORD ROBERTSON next read a paper on "The Normal Histology and Pathology of the Neuroglia in Relation Specially to Mental Diseases." (See original articles, page 733.)

FRIDAY AFTERNOON.

Dr. A. W. CAMPBELL read a paper "On the uses of Formol in the Neurological Laboratory" (with microscopical demonstrations), and another, "On the Course of the Pyramidal Tract" (with lantern demonstration).

Discussion.

Dr. HOWDEN, of the Durham College of Medicine, placed before the members several specimens which showed the difference between the preservative action of alcohol and formol. Dr. Howden said he should certainly recommend all the members present to use this method of mounting biological specimens. He thought it would completely reorganise the method of working in use in many biological laboratories.

The CHAIRMAN said they had tried the formol mounting at Morpeth, and found that it worked admirably.

Dr. HOWDEN said the formol method was cheaper because of the time it saved. One of the specimens which he showed them had been, he said, mounted for several months, and looked as well as ever.

Dr. CLOUSTON remarked that he was very much impressed by its efficacy.

Dr. NEWINGTON said, as a non-pathologist, he must express his great appreciation of the use of those little excursions into science. He was perfectly sure that gentlemen like Dr. Ford Robertson and Dr. Campbell were not only doing individual members good, but also doing the Association as a whole an enormous amount of good by directing public attention to its work. (Applause.)

Dr. CLOUSTON agreed with Dr. Newington in regard to the great value of these demonstrations, and suggested that the divisional meetings might well take up the question of scientific pathology, and take some steps by which the investigators in this field of science in individual asylums could have some inducement offered them to stay at this branch of work, instead of being, as at present, somewhat shifting members of the community. (Hear, hear.) These gentlemen had thrown themselves into this special and elaborate branch of work, and he thought it was for them to endeavour to see if we could not secure their services for medicine and science for a longer time. He thought it was one of the most important questions before them at the present time. (Hear, hear.)

Dr. MERCIER said that it was, in his opinion, a great source of congratulation that at a provincial meeting they could have two gentlemen who could produce such absolutely unique specimens as had been shown on that occasion. (Hear, hear.) After highly eulogising the work of Dr. Robertson and Dr. Campbell, he moved a vote of thanks to them.

The CHAIRMAN said he was sure it would be the wish of all present that he should thank Dr. Campbell very specially, and express to him their sincere admiration of the things he had shown them, both on the lantern screen and in the psychological laboratory. He was not in the habit of paying compliments, but he must say that the demonstrations of Dr. Ford Robertson and Dr. Campbell had been most admirable and most excellent.

The CHAIRMAN then conveyed the thanks of the Association to Dr. Campbell, who duly acknowledged them.

The CHAIRMAN then proposed a vote of thanks to a body to which he had the honour to belong, namely, the Durham University College of Medicine, for the many kindnesses which had been shown them during their meeting, and also for their courtesy in allowing them to meet in that building.

Dr. NEWINGTON seconded, and the motion was carried by acclamation.

This concluded the proceedings.

THE ANNUAL DINNER, ETC.

The annual dinner of the Association was held on Thursday evening, the 29th July, at the Grand Hotel, Newcastle-on-Tyne.

The attendance was large, and included amongst the visitors J. Blencowe Cookson, Esq., Chairman of the Committee of Trustees of the Northumberland County Asylum, and other members of this Committee, Professor Philipson, President of the College of Medicine, Professor Howden, and other leading members of the profession in Newcastle.

Professor Philipson entertained the members at lunch on Thursday in the most hospitable manner, and Dr. Callcott exercised a similar hospitality on Friday at the Borough Asylum.

The excursions to Hexham and Durham, and to the great Elswick Works, which had been arranged by the President, were not carried out, owing to a very large proportion of the members leaving before Saturday.

OMISSION.

In the report of the general meeting on the 18th May, in our July issue, omission was made of the reading of Dr. Outtersson Wood's paper on the Association nurses at the commencement of the proceedings, by the special permission of the President.

CORRECTION.

THE LUNACY BOARD OF IRELAND.

We regret that in the notice in the July number of the reconstituted Board of Commissioners for the general control of asylums for the lunatic poor in Ireland the name of Dr. Edward Maziere Courtenay was omitted. A similar error occurred in the list published by our contemporary, *The Lancet*.

THE MOSCOW INTERNATIONAL MEDICAL CONGRESS.

The subjects for discussion in relation to our specialty in the Section of Nervous and Mental Diseases were—Obsessions and Fixed Ideas, the Pathogenesis and Diagnosis of General Paralysis, the Pathology of the Nerve Cell, Hypnotism and Suggestion in relation to Legal Medicine and Mental Diseases, and the Operative Treatment of Diseases of the Brain.

The papers promised on these subjects were very numerous, and the list of authors included many of those best known to alienists. There were in addition many unclassified contributions.

Amongst the English-speaking contributors we notice the names of Drs. Althaus, Macewen, Alexander Robertson, B. Sachs, Shuttleworth, and J. F. Sutherland.

A VISIT TO A RUSSIAN LUNATIC ASYLUM.

BY DR. SHUTTLEWORTH.

During the meeting of the International Congress of Medicine at Moscow a visit was paid by several English superintendents of asylums to the *Préobragenskoie* Hospital for the Insane in the suburbs of Moscow. This asylum, the most ancient in Russia, had its origin in a decree, in 1762, of the Emperor Peter III., ordaining distinct accommodation for insane patients, apart from their care in convents and monasteries, which had previously been in vogue. After several makeshift arrangements, the present site was secured in 1804, and thereon were erected buildings for eighty patients—forty of each sex. According to the fashion of those days, a cell was provided for each patient; isolation, camisoles, fetters, "iron bracelets," etc., being thought essential to "calm" these unfortunates in their maniacal outbreaks! At the period of the French invasion of Moscow, in 1812, the staff of the hospital fled, and the poor patients were left to their own resources, some taking refuge with their relatives and others never being heard of again. Subsequently, owing to increasing pressure, it was found necessary to enlarge the hospital, and large extensions were made in 1840, 1878, and 1889. In the last-named year the non-restraint system was adopted; and in one portion of the building "open doors" (on the Scotch plan) may be found, giving the patients free access from the wards to enclosed airing-grounds.

It will be seen, therefore, that the building, which stands in an airy, elevated situation to the north-east of Moscow, presents the characteristics

of various epochs in the treatment of the insane. The older portion, which was first visited, consists of a number of galleries with single rooms of fair size. In the prison-like arrangements of this portion there was, of course, a degree of gloom which was not lessened by the absence of any attempt at decoration by means of pictures, plants, or pet animals. In the second portion of the building there were large rooms used concurrently for dormitory and day-room purposes, though whether this double use was only a temporary arrangement owing to repairs in progress or otherwise, was not quite clear. At the time of the visit there was certainly evidence of overcrowding, even the room used as recreation hall, with stage, etc., being half full of beds. Nominally there is accommodation for 410, but at present the number of inmates does not exceed 360, and the medical superintendent, Dr. Constantinowsky, evidently considers this number in excess of the proper accommodation, though unable to obtain better provision at the hands of the authorities. The medical staff consists of a chief physician and four resident assistants, besides four external (clinical) assistants and a pathologist. The staff of attendants and servants numbers 100 (62 men and 38 women); and it would seem that, both as regards medical and general attendance, the provision is liberal. The hours of the attendants are, as a rule, from 6 a.m. to 8 p.m., and their leave of absence is infrequent. The patients are evidently treated with consideration and kindness—there is an entire absence of mechanical restraint—and they appear to be well fed. An excited patient who threatened to be troublesome during our visit was promptly pounced upon by no less than five nurses, who led her off to an isolation room—a room not padded in any way. To English eyes the dress of the patients (especially the men) left much to be desired, many of them wandering about barefooted and with a paucity of garments. Small workshops were provided for tailors, shoemakers, carpenters, and bookbinders; and we saw creditable specimens of the work produced both by these and by the women. There seemed to be, however comparatively few patients employed. In a detached building near the entrance were billiard tables and other means of recreation for convalescents.

There is no doubt that much has been done by Dr. Constantinowsky to improve the mode of treatment and general conditions in the asylum. Much, however, remains to be done to bring it into line with the best asylums in Western European countries, especially in the matters of cleanliness, sanitary arrangements, and cheerful decoration of the walls. In this last respect the women's wards were decidedly superior to the men's, but a certain bareness was painfully evident throughout. Baths there were of copper, but insufficient in number, and we were told that the patients were bathed only twice a month. In Russia, however, it is possible that more frequent ablutions would be considered superfluous.

A word or two as to the attendants and nurses. The former it was difficult to distinguish from the patients, there being no uniform; but several appeared to be very youthful. The nurses were attired in picturesque uniform, consisting of black dresses, white caps, tippets, and aprons, and looked alert and intelligent. We were informed that the staff had some special training, but to what extent we could not learn. The proportion of medical officers to patients (1 to less than 50) would seem to ensure that due attention should be paid to the medical and other means of cure. A well-equipped laboratory is devoted to scientific and pathological research, with a special pathologist in charge. We were told that in every case of death the *post-mortem* examination reveals evidence of tubercular disease—a fact pointing to the imperfection of sanitary surroundings, which we have no doubt will be ameliorated as means permit.

RECENT MEDICO-LEGAL CASES.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

*Reg. v. Roach.**

Charles Tucker Roach, 32, labourer, was indicted for the murder of his wife and child. Prisoner had lived for some time before marriage with the woman and had by her a child, who at the time of the murder was ten months old. He eventually married the woman on Saturday, January 9th, and on the following Tuesday he committed the murders. It was proved that the prisoner had always been on affectionate terms with the woman, and there appears to have been no quarrel between them. It was suggested by the prosecution that the prisoner had been drinking, but the evidence did not bear out this suggestion. From the prisoner's own statement it appears that on the night before the murder he talked with his wife after they went to bed, discussing their future. He was unable to sleep, so he got up and had a smoke. He went downstairs and fetched a razor, with which he cut his wife's throat. This was at three o'clock in the morning. Some time afterwards, probably some hours—it was suggested that it was as much as five hours—he cut the throat of the child. He then cut his own throat, but not fatally, and arranged a piece of rope on a hook as if with the intention of hanging himself. In the morning he opened the front door to his sister, and in her presence he got into bed with the bodies, and put his arm round that of the child. The facts were not disputed. The defence was a plea of insanity, resting on the assumption that the acts were committed during a state of unconsciousness or sub-consciousness, the result of an attack of *petit mal*.

It was proved that several relatives of the prisoner on the mother's side had been insane, and that the prisoner had suffered from convulsions as a child, and had been subject to epilepsy in later life. Several relatives and comrades of the prisoner deposed that he not only had pains in the head, spasms, twitchings, and fits, so severe that he became insensible, and followed by violence, but that after the attacks of twitchings he would "fall into a doze" and know nothing of what passed, and that he would occasionally do irrational things for which he could give no explanation.

Dr. Boddy, of Crediton, had attended the prisoner ten years before for several days. Prisoner had been taken ill in the streets, and was "almost unconscious." Witness considered that the prisoner was then suffering from an attack of epilepsy.

Dr. Parker, who had treated the prisoner for the cut throat, stated that the prisoner's pupils were unequal and irregular; that for several days he appeared to have no memory of what had taken place; that his conduct was extraordinary and his behaviour peculiar, amounting more to stupor than to mania. His state would correspond with a post-epileptic condition.

Dr. Lionel Weatherly deposed that he regarded the prisoner as an epileptic, and that at the time of the murders the prisoner was probably in such a state of post-epileptic unconsciousness—absolute or partial—that he did not know what he was doing. Cross-examined: Would he expect the state of mind to last several hours? To this question the witness does not appear to have given a direct answer.

Dr. Law Wade had twice examined the prisoner, who had told him that he had no recollection of the murder of his wife, but that he killed the child because he felt that he could not leave it to strangers to be knocked about. He saw nothing in the condition of the man to lead him to the belief that he was insane. He gleaned nothing to convince him that the man was in an automatic state when he killed his wife.

* For the notes of this trial the editors are indebted to Dr. Weatherly.

Dr. Hyatt, surgeon to the gaol, had had the prisoner under his supervision, and did not discover anything to lead him to believe that the man was insane. The family history, however, led him to modify his opinion. Prisoner might be a partial epileptic, but was not, in his opinion, of unsound mind.

His lordship commented on the contention of the defence that the prosecution had shown no motive. It was not, he said, the duty of the prosecution to show motives. The question was whether the prisoner knew he was killing the woman and child—knew the quality of the act, that is, whether it was right or wrong. He had never heard that automatons were relieved of responsibility by law.

The jury returned a verdict of "Guilty, but insane."—Wells Summer Assizes, June 11th, 1897 (Mr. Justice Day).—*Bristol Times and Mirror*, June 12th.

A rare instance of the success of the defence of post-epileptic automatism, a defence which is usually laughed out of court, and which in the present case the judge evidently did his utmost to discredit. But, as often happens, especially with Mr. Justice Day, the jury showed a better appreciation of the psychology of the prisoner than the judge.

The main fact of the crime was the apparent want of motive. The prisoner had always been on exceptionally affectionate terms with his wife and child. The judge is reported to have declared that it was not the duty of the prosecution to show motive, but in this he must surely have been misreported, for the indictment speaks of malice aforethought, and if the prisoner was unconscious at the time of the act, there could have been no malice, no forethought, no motive, and no criminal intention. As a matter of fact, it is this absence of motive that appears to have had most weight with the jury, for the medical evidence of post-epileptic unconsciousness was by no means strong, and was rebutted by medical evidence on the other side. No medical witness had observed the prisoner in a state of post-epileptic automatism, although he had been under very close observation for five months in prison. His friends testified that he had done silly things and had been unable to account for doing them, and this was the nearest approach to any direct evidence of automatism that was produced. On the other hand, the interval of several hours between the two murders, and the fact that the prisoner alleged a definite motive for the second crime, are very strong arguments against the automatic nature of the action in the latter case. Post-epileptic automatism is very rarely indeed, if ever, of a duration that can be counted by hours. Commonly a few seconds or minutes are all that are occupied by this condition. Doubtless the maniacal excitement, the violence, the fury, that sometimes follow an epileptic paroxysm, are of longer duration. They may continue for many hours and for days; but it was not contended that there was any such condition in this case. The contention was that both the crimes were committed during post-epileptic automatism, and while there is certainly a degree of probability that the murder of the wife was so committed, it is very difficult to account for the murder of the child several hours afterwards upon the same hypothesis, unless we assume that the prisoner had two fits, and repeated after the second the act that had been done after the first. There would have been nothing uncommon in such a repetition of an act. On the contrary, it is the rule, and the very general rule, that whatever action is gone through after a fit is repeated after subsequent fits, but then would have arisen the question whether any such action had occurred after any previous fit, and this question could not have been answered affirmatively. There is another circumstance of considerable significance. The prisoner went downstairs to get the razor with which he committed the murders. Now, if the fit had occurred in the bedroom, it is improbable to the point of inconceivability that he should have gone downstairs for a razor instead of taking the first thing that came to his hand. On the other hand, if the fit occurred downstairs, while he had the razor in his hand, it is very improbable that he would, in an automatic state, have gone upstairs again to cut his wife's

throat. The rule, in this condition, is that the patient, taking whatever he finds in his hand, proceeds to do with it what he is accustomed to do with it, or with any instrument resembling it; and he proceeds at once with his action. He does not seek favourable circumstances; he does not go upstairs, or out of doors, or into another room, to do it. He does it, or something as near it as he can, then and there, on the spot. Thus, a woman cutting bread and butter for her children's tea is seized with a fit, and in her post-epileptic automatism she goes on using her knife, not on the bread, but on her child's throat, the child being sitting beside her at the time. But she does not go into the next room to find the child, still less does she go upstairs and cut its throat in bed. Nor, if her hands are empty, does she go downstairs to fetch a razor. The action is unreasoning, not only in its main effect, but in all the details of its accomplishment. The action in this case was singularly efficient in its details, and unreasoning only in its main purpose.

On the whole, the case for epileptic automatism appears to me singularly weak, and the success of the plea of insanity must, I think, have been due to other considerations. Foremost among these was, no doubt, the absence of any reasonable motive for the crime. If it is, as the learned judge maintained, no business of the prosecution to prove a motive, it is certainly a duty which the jury imposes upon itself to attribute a motive, and to take this motive into consideration in arriving at their verdict. In this case there appeared to be no motive at all, and the prisoner appeared as much puzzled as every one else as to why the crimes were committed. It is impossible that such total absence of apparent motive should not have weighed with the jury. In connection with this absence of reasonable motive, a very strong history of insanity in the prisoner's family probably had great weight with the jury, and this family history was corroborated by the definite history of epilepsy in the prisoner himself. Either of these three circumstances, taken alone, would have raised a suspicion of insanity. The three together could hardly be resisted; and it is probable that, in returning the verdict they did, the jury formed a correct conclusion on correct grounds. The crime seems to have been one of those motiveless crimes that are not unfrequently committed by persons of the prisoner's history and antecedents. It is no very uncommon thing for a man of insane stock, himself showing strong evidence of neurotic inheritance by his liability to epilepsy, to commit a brutal and motiveless crime. We cannot penetrate into his consciousness and see precisely how the crime came to be committed; but we recognise, and juries recognise, that in such cases the family history and antecedents ought to be taken into account, and the prisoners ought not to be held fully responsible for the crime.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF LORDS.

Lunacy Bill.

The House went into Committee on the Lunacy Bill.

On Clause 15, which gives power to the Commissioners to require amendments of regulations of hospitals,

Earl Russell, by way of amendment, moved the omission of the clause on the ground that it was not necessary to give such powers to the Commissioners in the case of county and other asylums which were managed by large public authorities, the members of which were elective and whose actions were subject to criticism.

The Lord Chancellor could not accept the amendment. He thought the alteration proposed by the clause was well advised. If the noble lord had suggested an alteration in the clause or the placing of some restriction upon

it, that would have been considered at a later stage before the Standing Committee, but his present proposal was to leave out the clause altogether.

Lord Monkswell entirely agreed that the clause as it stood gave too much power to the Commissioners in the internal management of asylums.

The Earl of Northbrook suggested that where asylums were maintained out of county or borough rates the council of the county or borough should have the opportunity of making representations against the proposed rules before the Secretary of State gave his decision. (Hear, hear.)

The Lord Chancellor thought this a very reasonable suggestion, and said he would welcome an amendment in that direction.

On Clause 23,

The Earl of Northbrook said he had been requested by the County Councils Association to suggest that this clause might with advantage be omitted. It did not appear to have essential connection with the rest of the bill, and county councils said, as he thought with justice, there were strong objections to the clause. It provided that the provisions of the Poor Law Superannuation Act, 1896, should be applied to the officers and employees of lunatic asylums, and the objection to this was that the nature of the employment of persons in lunatic asylums in constant communication with lunatics was such that the length of time required to give superannuation allowances to persons employed under boards of guardians was not properly applicable to persons employed in lunatic asylums. Under the present law, visiting committees could grant to any officer of 50 years of age and not less than fifteen years' service an allowance not exceeding two-thirds of his salary, subject to the control of the county council. This law had not worked badly, and though these officials had not the absolute right to a pension, as a matter of practice it was never refused. Under the proposal in the clause future officers in the asylums would be at a disadvantage, receiving a smaller superannuation and being subject to a 2 per cent. deduction from their salaries. The Poor Law Superannuation Act had not been received with unqualified approval throughout the country; it had been said, and he believed with truth, that the percentage was not sufficient to protect the ratepayers from loss, and there would be strong objection to the extension of the Act to another class of employees.

Earl Russell joined in the appeal to the noble and learned lord to omit the clause. It would be very strongly opposed in that House and elsewhere, both on the ground taken by the noble earl and on the ground that the scale of allowance was too liberal.

The Earl of Kimberley said the objections urged to the clause indicated the necessity for giving careful attention to the pension scheme, and, looking at the period of the session, he advised the omission of the clause.

The Lord Chancellor said the period of the session was a cogent argument. When he introduced the bill he mentioned that these superannuation clauses would not be pressed against any strong opposition. The proposals were attacked from two points of view—that the scale was too liberal, and that it did not do justice to persons employed in asylums. Of course, the attempt to force these clauses through might imperil the other clauses, to which there was no opposition and for which there was urgent necessity. Under the circumstances he yielded, for the prospect of opposition in the other House was a conclusive argument in the middle of July. He would propose the omission of all the superannuation clauses.

The clause, as well as Clauses 24 and 25, were omitted from the bill. The remaining clauses were agreed to, and the bill, as amended, was reported to the House.

HOUSE OF COMMONS.

Beri-beri at the Richmond Lunatic Asylum.

On July 19th, in answer to Mr. P. A. M'Hugh, Mr. Gerald Balfour said—Thirty-six patients and three nurses in the Richmond Asylum are at present suffering from the disease known as beri-beri. The disease first appeared in

the institution about May, 1894, and continued until October, after which no fresh cases occurred. There was no outbreak in 1895, but it reappeared in August, 1896, since when the institution has not been entirely free from it, although it almost died out in the colder months. Ten nurses in all have suffered from it—viz., seven in 1896 and three during the present year. Medical experts are of opinion that the disease was fostered by overcrowding. It is the duty of the Board of Control to provide such accommodation as is necessary in the district asylums in Ireland. In consequence of the rapid increase of lunacy in the Richmond District, it was decided in 1892 to build an additional asylum for 1,200 patients at Portrane, and that work is now in progress. In 1893 and 1894 temporary buildings were erected at Richmond Asylum for 298 patients, and since then accommodation has been provided for 224 patients, and further buildings are now being erected, which, it is anticipated, will make the total accommodation sufficient for the number at present in the asylum. The Board of Control are anxious to aid and promote by every means in their power any reforms necessary for the improvement of the Richmond Asylum, and works are being carried out with the view of effecting that object.

Beri-beri.

On August 7th Mr. Sheehy asked the Chief Secretary to the Lord-Lieutenant of Ireland whether he was aware that the medical superintendent of the Richmond Asylum had been complaining about the overcrowded condition of his institution in his annual reports since 1886 to the governors; and that a contract, involving nearly a quarter of a million sterling on the new asylum at Portrane, was given away by the Board of Control, which was an unrepresentative body, without consultation with the Board of Governors; whether he would state to the House the amount of money expended on temporary buildings which had been condemned by Dr. Patrick Manson, of London, and by Sir Thornley Stoker, of Dublin; and whether his attention had been called to the statement in the Inspectors' Report for 1891 that the Richmond Asylum was originally constructed for 600 patients, that there were now considerably over 1,800 patients in the asylum, and that the additional temporary accommodation did not even provide for the increase in the numbers, since the inspectors reported in 1890 that the congestion paralysed every effort to treat the insane.—Mr. Gerald Balfour replied that the fact was as stated in the first paragraph. It was not true that the contract for the Portrane Asylum was given away by the Board of Control without consultation with the Board of Governors. The expenditure on the temporary buildings which were erected with the concurrence of the governors amounted to about £12,000. The medical gentlemen referred to considered wooden buildings unsuitable for the treatment of beri-beri patients, but the buildings erected at Richmond had been designed with every possible attention to sanitary requirements, and were, in the opinion of the inspectors of lunatics, suitable for the accommodation of the insane.

The Certification of Lunatics.

Dr. Tanner asked the Chief Secretary to the Lord-Lieutenant of Ireland whether, in the case of any dangerous lunatic confined in an asylum, in whose behalf application had been made that he or she should be discharged, having ceased to be insane, such application could not be entertained until it was certified to the Lord-Lieutenant by two physicians or surgeons that the individual had become of sound mind, or it had been certified by the resident medical superintendent or visiting physician that he had ceased to be dangerous, and if in the case of the two former authorities demanding such release any demur on the part of the local medical (asylum) authorities could prevent it.—Mr. Gerald Balfour replied—In the case of a dangerous lunatic committed to a district asylum under the 10th Section of the Act 30 and 31 Vict., Cap. 118, it is not necessary for two physicians or surgeons to certify that the individual has become of sound mind before an application for discharge can be entertained. The discharge of such lunatics is regulated

by Section 11 of the Act and by the latter part of Section 10. Section 11 requires the resident medical superintendent or the visiting physician to certify that the person has either become of sound mind or has ceased to be dangerous, while the latter part of Section 10 enables relatives or friends under certain conditions to take the lunatic under their care and protection on entering into sufficient recognisances for his safe keeping. But the Court of Appeal has held that there is no absolute right conferred by this section, and that it remains optional with the governors of the asylum to so transfer the custody of the lunatic.

Reformatories for Inebriates.

Dr. Farquharson asked the First Lord of the Treasury whether it was his intention to introduce, during the present session, the bill for the establishment of reformatories for inebriates, mentioned in the Queen's Speech; and, if he did so, whether he would include in it arrangements for the reception of habitual offenders in labour settlements, as recommended in the Departmental Committee (1895) on Habitual Offenders, Vagrants, Beggars, Inebriates, and Juvenile Delinquents (Scotland), and the report from the Departmental Committee on Prisons (1895)?—Mr. Balfour: No, Sir, I do not think there is any probability of the Home Secretary being able to introduce such a bill during the present session.—Dr. Farquharson: If the right honourable gentleman cannot find time to introduce the bill in this House, can he follow the precedent of the Private Bill Legislation (Scotland) Bill, and introduce it in another place where there is plenty of leisure?—Mr. Balfour: I will consult the Home Secretary.

THE RICHMOND ASYLUM.

The following letter, published in *The Dublin Daily Express*, conveys the views of a layman on the state of affairs in regard to this institution:—

To the Editor.

Sir,—In a leading article in your issue of this day you suggest that possibly I take a pessimistic view when I say that the first section of the permanent buildings of the new asylum at Portrane will not be available until well into the next century: in other words, ten years after the Inspectors of Lunatics earnestly asked the Board of Control for additional lasting accommodation. I wish I could agree with you that my anticipation will be falsified by the result. Unfortunately, the history of the Board of Control in reference to the Richmond is a long, gloomy tale of delay and indifference. Permit me to give you the latest instance of their tardiness in response to what I might call the persistent clamours of the governors. On the 14th December last the architect of the Board of Control made a report on the temporary buildings at Portrane, in which he wrote: "Block No. 3 will be put in hand immediately after Christmas. This block will contain two wards, one for fifty chronic patients, and the other for thirty-five sick and infirm patients, with the necessary allowance of dormitory space per bed." In the ordinary course of business this block should have been finished early in last March, and this was the time the Board of Control fixed for its completion. In all reasonableness I ask what are your readers to think when I tell them that this shell of a refuge will not be ready for some months yet? Six months ago I ventured to suggest at a meeting of governors that the energy of the Board of Control would not be equal to the putting up this wooden structure in the time specified. One of the governors (Mr. J. Walker) on that occasion angrily assailed me for making such an assumption. What has Mr. Walker got to say now? I do not wish to be an alarmist, but to-day I have ascertained that the number of patients attacked with beri-beri has increased to over forty.—Yours truly,

JOHN CLANCY.

Bellevue, Sutton, 19th July, 1897.

SUPERANNUATION AT THE CUMBERLAND AND WESTMORLAND JOINT LUNATIC ASYLUM.

The following is a copy of resolutions passed at a meeting of the Lunacy Committee, held on the 28th June, 1897:—

Resolved—That the Committee of Cumberland and Westmorland Asylum are of opinion that any officer who is in constant attendance, medical or otherwise, on patients in the wards of a lunatic asylum, and who, in such capacity, has completed an aggregate of 25 years' service, ought to have the option of retiring after the age of 50, with a pension calculated upon the basis set forth in the Poor Law Officers Superannuation Act, 1896.

Resolved—That a copy of the above resolution be sent with a suitable letter to Earl Beauchamp, all peers resident in the two counties who have seats in the House of Lords, and also to all the members of Parliament for the two counties, asking them to support this resolution in their respective Houses.

MEDICO-PSYCHOLOGICAL NURSING CERTIFICATES AT CLAYBURY ASYLUM.

Dr. Collins, the Chairman of the London County Council, on the 30th August distributed these certificates to the male and female staff, with an appropriate address on the duty of kindness and gentleness to patients.

IRELAND ON IDIOCY.

Twenty years have elapsed since the publication of Dr. Ireland's book *On Idiocy and Imbecility*. He now desires to give to the world a comprehensive treatise on the *Mental Affections of Children—Idiocy, Imbecility, and Insanity*, which would expose his more mature views and the results of the latest scientific enquiries. As monographs of this kind seldom command a large sale, Dr. Ireland wishes to obtain 200 subscribers before publishing, so that he may be free from pecuniary risks. No book on idiocy has as yet come to a second edition, and there is no book on insanity in children in the English language, though there is one both in German and in French. Dr. Ireland has already sent circulars to the members of the Medico-Psychological Association, and nearly 20 per cent. of these members have already kindly subscribed, but it will be more difficult to get the second hundred. The book will contain about 300 pages octavo, with illustrations, and the price to subscribers will be eight shillings on delivery. Write for copies to Dr. W. W. Ireland, Mavisbush House, Polton, Midlothian.

MALE NURSES' (TEMPERANCE) CO-OPERATION.

The third annual report of this society testifies to the success which it has attained.

The average earnings per man for the year, after paying all expenses, has been £101 18s. 2d.

The staff has been more than doubled, so that now more than one hundred men are steadily employed and further increase is contemplated.

A sick fund has been established during the year.

We heartily wish success to this development of co-operation, and trust it will continue to maintain the high standard of character which distinguishes its members.

ASSAULT ON DR. MERSON.

We regret to record an assault on Dr. Merson by a patient who had been regarded as harmless. The assault was committed with a cricket bat, after the conclusion of a cricket match, on the ground adjoining the asylum, near the village of Willerby.

Dr Merson was rendered unconscious by the blow, and is still incapacitated from his duties. He is, however, we are glad to report, steadily improving.

THE LIBRARY.

The Library Committee beg to acknowledge the contribution of a large collection of plans of asylums, etc., etc., of interest in relation to the early history of the Association, from Dr. Brushfield.

OBITUARY.

SIR JOHN CHARLES BUCKNILL, M.D., F.R.C.P., F.R.S.,

Citizen-Soldier and Psychologist.

Through the death of Sir John Charles Bucknill, a man of "light and leading" has been lost to the profession generally and to the specialty in particular. As a pioneer member of our Association, he actively promoted the study of Psychological Medicine, and was assiduous in the diffusion and application of the knowledge thus gained.

It is now upwards of forty-three years since he was appointed the first Editor of our *Journal*, in which capacity, as well as in that of a valued and voluminous contributor to its pages, he has been largely instrumental in improving the status of alienist physicians and in ameliorating the condition of the insane. The task of filling the place left vacant in our ranks by the death of this distinguished man will be one of considerable difficulty.

John Charles Bucknill was born at Market Bosworth, in Leicestershire (on the 25th December, 1817), where his father, Mr. John Bucknill, practised as a surgeon. There was a younger brother (Alfred), who obtained a commission in one of the Sepoy regiments of the East India Company, and died after a few years' service from post-nasal hæmorrhage. His decease was quite unexpected, and a source of great grief to his brother John. He had also two sisters, Louisa and Amelia, and a half-sister, Julia (by his father's second wife), who survives, and who spent many months with Sir John at Bourne-mouth during his long illness.

Dr. Bucknill was educated at the Grammar School in his native town and at Rugby under the great Dr. Arnold. The charm of that "prophet among schoolmasters," as the Bishop of Hereford calls Arnold, does not appear to have possessed young Bucknill, as he did not complete his course at the famous school.

In 1835 he was entered as a student at University College, London, and five years later took the degree of Bachelor of Medicine at London University, obtaining high honours in both medicine and surgery. Subsequently he became house-surgeon, under Liston, at University College Hospital, where Sir John Eric Erichsen and Sir Richard Quain were among his contemporaries.

In 1842 Dr. Bucknill married Mary Anne, only child of Mr. Thomas Townsend, of Hillmorton Manor, Warwickshire, by whom he had three sons—Colonel Bucknill, late of the Royal Engineers; Mr. T. T. Bucknill, Q.C.,

M.P. for the Epsom Division of Mid-Surrey; and Charles Bucknill, now dead. Mrs. Bucknill died in 1889.

After leaving University College Hospital, Dr. Bucknill carried on a practice in Chelsea until his health broke down and he was ordered to a warmer climate (Madeira, Devonshire, or Cornwall). This no doubt determined his application for the Devon County Asylum.

Dr. Bucknill was appointed the first medical superintendent of the then recently built County Asylum at Exminster, Devon, in 1844, and held that position for eighteen years. Unhindered by tradition, and allowed a somewhat free hand by the authorities, Dr. Bucknill was able to organise the asylum *more suo*, with the result that he merited and received the approval of both his own Committee and of the Commissioners in Lunacy. The new line struck out by him, in providing *extra-mural* residences for the treatment of certain of his asylum patients, was spoken of by the Commissioners in their thirteenth annual report in the following eulogistic terms: "There were also seven other female patients, who were boarding and lodging, under the charge of the medical superintendent and the committee, in cottages beyond the precincts of the asylum. The condition of these women was reported to be very satisfactory, and we should be glad if the example thus set were followed by the visitors in other counties." It must be remembered that these words were written in 1859.

In 1852, whilst at Exminster, Dr. Bucknill took his M.D.Lond., and shortly afterwards became a Fellow of University College, of which body he was also a Member of Council for some years.

Suggestions of the publication of a journal to represent the Association of Asylum Medical Officers were first "made in Germany" by Dr. Damerow, of Halle, in 1844, and were supported by Dr. Bucknill and others, but the scheme was not carried out until 1852. In that year was started *The Asylum Journal of Mental Science*, with Bucknill as its first editor.

The first number of the new journal was published November 15th, 1853, and for the first two years of its existence appeared every six weeks, after which it was made into a quarterly journal and its style and get-up improved.

Dr. Bucknill continued to edit the *Journal* with uniform success until he was appointed Lord Chancellor's Visitor in 1862, when the duties of his new office compelled him to resign its conduct into other hands.

Dr. Bucknill's term of editorship was marked by the most painstaking assiduity, and he spared neither himself nor others in providing for the due and regular appearance of the *Journal*. On this subject Mr. T. T. Bucknill feelingly writes: "I well remember the early days of *The Journal of Mental Science*, and how I used to ride on my half-wild Exmoor pony backwards and forwards between Exminster Asylum and Pollard's, the printer's, in Exeter, with proofs for the press. It mattered not what was the weather or the hour; I had to do it, and do it quickly."

A pamphlet on the law and theory of insanity was written by Dr. Bucknill in this year (1852), and was devoted, as were all his publications prior to 1855, to the legal relations of insanity.

With all this professional work in hand, it might have been thought that Dr. Bucknill would have no time for anything else. On the contrary, however, it was just at this time that he occupied himself with the question of National Defence. His exertions and enthusiasm were actively engaged in obtaining the sanction of the War Office to the enrolment of a corps of citizen soldiers, under the name of the Exeter and South Devon Volunteers, and with the help of Earl Fortescue he effected his purpose. The new corps, which was officially styled the 1st Exeter and Devonshire Rifle Volunteers, proved highly successful, and formed the nucleus of our present huge and efficient citizen army.

Bucknill entered heart and soul into the new movement, and devoted himself in his spare moments to the organisation, drilling, and various other duties connected with the regiment, carrying them out in such a manner as to earn

the admiration and thanks of all concerned. He was the first recruit sworn in, and stuck to the ranks all through his connection with the regiment, although frequently pressed to become a commissioned officer.

On leaving Exminster Dr. Bucknill took the corner house in Cleveland Square, W., where Lord Playfair used to live. In the library of this house there was a chair which was said to have been frequently used by the late Prince Consort when consulting with Dr. Lyon Playfair, and which was much valued by Dr. Bucknill. After a few years' residence in this charming house he moved to a larger one in Wimpole Street, and from that to Hillmorton on the death of Mr. Thomas Townsend. At Hillmorton Dr. Bucknill tried his hand at farming a considerable acreage, and took a great interest in it, but probably found it a pursuit of more pleasure than gain.

In 1855 he contributed an article to *The British and Foreign Medico-Chirurgical Review*, on "The Pathology of Insanity," and in 1857 was awarded the Sugden Prize for his thesis on "Unsoundness of Mind in its relation to Criminal Actions." These were followed, in 1858, by his greatest work, entitled *A Manual of Psychological Medicine*. This book was written in collaboration with the late Dr. D. Hack Tuke, and has gone through four editions. The two authors wrote separately, Dr. Hack Tuke writing the first half of the volume, comprising the chapters on Lunacy Law, Classification, Causation, and the various forms of insanity; whilst Dr. Bucknill contributed the chapters dealing with Diagnosis, Pathology, and Treatment. The work was for years the standard book on psychological medicine, and now, though somewhat out of date, remains a monument for all time testifying to the knowledge and labours of its distinguished authors.

In 1859 Bucknill was made a Fellow of the Royal College of Physicians, and subsequently filled the posts of Censor (1879-81) and Lumleian Lecturer (1877) in that corporation. Dr. Bucknill in this year (1859) took an excursion into general literature, and wrote an able work on *The Psychology of Shakespeare*, followed in 1860 by *The Medical Knowledge of Shakespeare*. Both books are good examples of Bucknill's literary style and critical acumen.

1860 saw Dr. Bucknill President of the Association his labours had done so much to foster and develop.

Dr. Bucknill, having been appointed Lord Chancellor's Visitor of Lunatics, in 1862 had to resign the superintendency of the Devon County Asylum and the editorship of *The Journal of Mental Science*, and devote himself to the duties of his new office. He was eminently suited to his new post, where his commanding presence and authoritative manner never failed to impress members of that rather troublesome class of patients, and his appreciative, though essentially non-committal, ejaculation, AH!! given, as it invariably was, *ere rotundo*, after listening patiently to the end of some irrelevant incoherency of complaint or delusion, was a thing to hear and enjoy.

All psychological questions possessed the greatest fascination for Dr. Bucknill. One of the problems which exercised him was—whether the apparitions which occur to insane patients suffering from hallucinations of sight, and which are real, solid facts to such patients, are or are not transparent, or whether they are as solid visually as they are mentally to them? Bucknill was inclined to think that they were solid to the patient, and was anxious that the writer of this notice should take up the consideration of the subject. This, unfortunately, was never done.

In 1876 Dr. Bucknill resigned his office under the Lord Chancellor, and commenced private consulting practice in his special department, but, nevertheless, continued to interest himself in asylum matters. In 1877 he delivered the presidential address before the Psychological Section at the annual meeting of the British Medical Association at Manchester, exhibiting therein a breadth of view and grasp of detail in matters medical outside his own special department which called attention to the extent of his general professional knowledge.

In 1875 Dr. Bucknill paid a visit to the United States, with a view of

studying the question of inebriety and its treatment in that country. The record of his observations made there, and their special bearing on proposed legislation for inebriates in this country, are contained in his book, *Habitual Drunkenness and Insane Drunkards*, published in 1878. Several papers on American asylums for the insane were also the outcome of this visit. About this time, in conjunction with Sir James Crichton-Browne, Dr. Ferrier, and Dr. Hughlings Jackson, he brought out and edited the neurological journal *Brain*.

Dr. Bucknill's later writings have chiefly concerned themselves with the care of the insane and their legal control, and the relation of madness to crime.

Sir John Bucknill's views did not always commend themselves to his medical confrères—e.g. his strictures on private asylums—but his opinions were always honest and outspoken, and he possessed the courage of them. He was essentially a fighting debater, and loved "the clash of arms" and "din of battle," but nevertheless did not despise a "quiet round" with a Bishop at the Metaphysical Society.

He was a member of several London clubs, the Athenæum and Garrick amongst others. He was also a member of the Casual Club, a "smoky talky" literary scientific club, meeting every Thursday evening, for six months in the year, in Nell Gwynn's old drawing-room in a house adjoining Pall Mall. To this club the writer had the pleasure of proposing both Bucknill and his collaborator, Hack Tuke; and very good "Casuals" they both made. It was an open secret that Sir John Bucknill did not believe Dr. Hack Tuke would ever live to complete his *Dictionary of Psychological Medicine*. He must have been much astonished at its early publication.

Sir John Bucknill was a Fellow of the Royal Society, a Justice of the Peace for the County of Warwick, a visitor of the Warwick County Asylum, and a Governor of Bethlehem Hospital.

He was a keen sportsman, fond of all kinds of outdoor sports—shooting in Caithness and North Wales, fishing in Canada and Norway, foxhunting in Warwickshire, and whilst a Volunteer a good rifle shot.

On the æsthetic side he showed a fondness for music and pictures. In company with Mrs. Bucknill he paid visits to Italy and Flanders, and from the former country returned laden with photographs and some full-sized copies of pictures in the Roman galleries.

Sir John was a man of most reserved habits, and to his own people most uncommunicative about himself. His wife, some years ago, asked him to record some of the chief events of his life for the sake of his family, and he promised her to do so, but he never did. Colonel Bucknill says that his father was "demonstrative in wrath; but it was not so evident when he was pleased. He was a difficult man to understand." The writer was, however, impressed with the depth of his affection for his children from experience of his anxious solicitude shown during the severe illness of Colonel Bucknill when living at Surbiton. During that anxious time parental affection peeped out very strongly.

In his early life Sir John Bucknill was a Palmerstonian in politics, but after leaving Devonshire gradually became a Moderate Conservative.

Sir John was a man of fine physique, and, standing as he did an inch and a half over six feet in height, and being correspondingly proportioned, he must have presented a noble appearance in his regimentals.

Bucknill was knighted in 1894, the honour being conferred not only as a recognition of his services in the matter of National Defence, but also as a mark of the distinguished place he held in his own profession.

Sir John Bucknill died at his Bournemouth residence on July 20th, 1897, and was buried at Clifton-on-Dunsmore, near Rugby, on July 22nd.

As to the cause of his death, Dr. Barnard Scott, who made the autopsy, writes to Colonel Bucknill: "Septic inflammation from catheterism—brain healthy as yours—all his symptoms due to septic absorption—we have not found anything wrong, except in the kidneys and bladder."

A detailed biography of Sir John Bucknill, it will be learnt with great satisfaction, is in course of preparation at the hands of his eldest son.

CROCHLEY CLAPHAM.

DR. HOWDEN.

The death of this well-known and highly esteemed member of our specialty, which occurred on August 17th, at his residence at Sunnyside, Montrose, will be a source of regret to all those members of our specialty who had the pleasure of his personal acquaintances.

His retirement last year from active work, in consequence of failing health, following an attack of paralysis some three years since, renders his death less a matter of surprise to those who knew of this previous illness.

Dr. Howden, after acting for some time as medical assistant in the Edinburgh Asylum, was appointed medical superintendent of the Montrose Asylum in 1857, being then only twenty-seven years of age. His service at his retirement in June last was close upon forty years, and the high esteem in which he was held was evidenced by a retiring allowance of £575 and an additional £105 per annum for services as consulting physician.

Dr. Howden had been a member of our Association since 1863, and he took a very active interest in the local institutions and affairs of Montrose. He had, therefore, a very wide circle of friends who deplore his loss.

We propose in our next issue to give a detailed account of Dr. Howden and his life's work.

R. J. STEPHENS, M.R.C.S.

On the 11th August, in consequence of a bicycle accident at Preston, Richard John Stephens, M.R.C.S.Eng., L.S.A.Lond., Assistant Medical Officer, County Asylum, Whittingham, Lancashire, the second son of Mrs. Dickson, Wellesbourne House, Blackheath, in his 34th year.

RESIGNATIONS.

DR. ADAMS.

The resignation of Dr. Adams, superintendent of the Cornwall Asylum, at Bodmin, removes from the list of superintendents one of the early members of the Association, which he joined in 1857. We are informed that his valuable and lengthened period of service (forty years) has been recognised by a superannuation of £567 per annum, practically the highest possible amount under the pension scale adopted in Cornwall.

DR. BYWATER WARD.

We have to record the retirement of Dr. Bywater Ward from the post of medical superintendent of the Warneford Asylum, Oxford, after twenty-five years' service. The governors of this institution have recognised the value of Dr. Ward's services by granting him a pension of £400 per annum.

BOUNDARIES OF THE ENGLISH DIVISIONS OF THE ASSOCIATION.

South-Western includes Berks, Cornwall, Devon, Dorset, Gloucester, Hants, Hereford, Oxford, Somerset, Wilts, Worcester, and South Wales.

South-Eastern includes Bucks, Cambridge, Essex, Herts, Kent, London, Middlesex, Norfolk, Northampton, Suffolk, Surrey, and Sussex.

Northern Division includes Cheshire, Cumberland, Derby, Durham, Lancashire, Leicester, Lincoln, Northumberland, Nottingham, Shropshire, Stafford, Warwick, Westmoreland, York, and North Wales.

An outline map is appended.

OUTLINE MAP OF DIVISIONS.



EXAMINATION FOR THE CERTIFICATE IN PSYCHOLOGICAL MEDICINE.

The following candidates were successful at the examination held on the 15th of July, 1897:—

England (examined at Bethlem Hospital).—Thomas Aldous Clinch; William Henry B. Stoddart.

Scotland (examined at the Royal Asylum, Edinburgh).—Ernest Francis Bashford; Cecil Charles Murison; A. Ague Rust; William Moncrieff Paul.

The following were the written questions :—

1. What forms of Mental Disease are complicated by Epilepsy during the three periods of life, and how is the treatment of these forms influenced thereby?

2. A woman steals an article of value whilst shopping, what circumstances would influence you in concluding that she ought or ought not to be punished for the theft?

3. Describe a case of "Climacteric" Melancholia. State your prognosis and treatment.

4. Describe briefly the general and microscopic pathological characters found in the brain in cases of General Paralysis.

5. Detail a case of Epilepsie Larvée.

6. Describe the various forms in which delusion manifests itself in Dementia Paralytica.

The next examination will be held in December, 1897. Due notice of the date will be given in the medical journals.

WINNER OF THE GASKELL PRIZE.

Charles Hubert Bond, M.D. Edin., C.M. (Univ. Edin.), B.Sc. (Pub. Health).

The following were the written questions :—

First Paper.

1. "Total loss of memory." Examine this expression, and indicate the cases to which it is strictly applicable.

2. Under what circumstances is the emotion of sexual modesty normally experienced? Are these circumstances uniform for all people? Give instances of pathological defect, and excess of this emotion.

3. Describe accurately the meaning that you attach to the expression "loss of control." What cause do you assign to this condition?

4. What is believed to be the anatomical relation of the neurons with each other?

5. Give in full the pathological changes found in the Cerebral Cortex in Chronic Epilepsy. How do they agree with or differ from those of Chronic Alcoholism?

6. What are the degenerations found macroscopically and microscopically in the bones in General Paralysis of the Insane?

Second Paper.

1. What forms of insanity are associated with Phthisis, and in what ways are they associated? What bearing has the association with Phthisis upon the prognosis of insanity?

2. A man is indicted for the murder of his child. It is proved in evidence that his mother and several of his maternal relatives have been insane, and that he has himself suffered from epilepsy; that he had always lived on affectionate terms with his wife and child; that one night, after a friendly conversation with his wife, he had gone downstairs, fetched a razor, and with it had cut her throat; that, at least three hours afterwards, he had cut the throat of the child. Insanity is pleaded. What evidence of opinion could an expert properly give in support of this plea? State fully the grounds of your opinion.

3. Are there any circumstances in which an insane person is fit to be at large? If so, state the circumstances.

4. Give in detail the Oculo-motor symptoms and altered tendon reflexes found in General Paralysis of the Insane, explaining how they vary in the course of the disease.

5. What arguments can you adduce in favour of the septic or toxic origin

of Puerperal Insanity proper? What line of medical treatment would you advocate for this disease?

6. What are the mental symptoms in Morphinomania? Discuss the validity of a will made by a morphinomaniac shortly after admission into an asylum.

EXAMINATION FOR THE CERTIFICATE IN NURSING AND ATTENDING ON THE INSANE.

The following candidates passed the May examination for the nursing certificate in addition to those whose names were published in the July number of the *Journal*:—

Richmond Asylum, Dublin.—*Males*: Charles Mathew, William Kane, John Murray, Hugh O'Donnell. *Females*: Margaret Bushe, Mary Burke, Kate Burne, Mary Conlon, Mary Daniels, Maria Foley, Bridget Gilligan, Elizabeth Hogan, Eliza McIntyre, Margaret A. Macready, Annie O'Reilly, Josephine O'Donnell, Margaret Parr, Annie Raleigh, Laura Reed, Bridget Wilson.

The next examination will be held on Monday, the 1st day of November, 1897. Candidates should obtain from the Registrar (Dr. Spence, Burntwood Asylum, near Lichfield) a schedule, which should be duly filled up, signed, and returned to him at least four weeks before the date of the examination. Monday, October 4th, was the last day upon which, according to the rules, candidates could enter their names for the November examination.

NOTICES OF MEETINGS.

The next General Meeting will be held on Wednesday, November 17th, at the Rooms of the Association, 11, Chandos Street, Cavendish Square, W.

South-Western Division.—The Autumn Meeting will be held at Brislington House, Bristol, on Tuesday, 26th October, 1897.

South-Eastern Division.—The Autumn Meeting will be held at St. Andrew's Hospital, Northampton, on Wednesday, October 13th.

APPOINTMENTS.

LAYTON, H. A., L.R.C.P. Edin., appointed Medical Superintendent of the Cornwall County Asylum, Bodmin, vice Dr. Adams, resigned.

NEIL, JAMES, M.D., M.P.C., has been appointed Medical Superintendent of the Warneford Asylum, Oxford, vice Dr. Bywater Ward, resigned.

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